CIVILIAN AVIATION PERSONNEL TRAINING

HEARINGS

BEFORE THE

COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE HOUSE OF REPRESENTATIVES

EIGHTY-SECOND CONGRESS

SECOND SESSION

ON

H. R. 7073 and H. R. 7074

BILLS TO AID IN MEETING THE DEFENSE MOBILIZATION REQUIREMENTS OF THE UNITED STATES BY PROVIDING FOR THE TRAINING OR RETRAINING OF CIVILIAN AVIATION PERSONNEL

APRIL 28, 29, AND 30, 1952

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CONTENTS

	Page
Text of—	
H. R. 7073	1
H. R. 7074	3
Report of—	
Air Force Department on—	
H. R. 7073	2
H. R. 7074	4
Civil Aeronautics Board	7
Commerce Department	5
Defense Mobilization, Office of	9
Federal Security Agency	8
Justice Department	12
Labor Department	9
National Security Resources Board	7
Statement of—	
Balfour, Maxwell W., president, Aeronautical Training Society, Tulsa, Okla	34
Cary, Charles O., Deputy Administrator, Defense Air Transportation Administration	107
Disosway, Brig. Gen. Gabriel P., Director of Training, Headquarters, United States Air Force	13
Faught, C. K., Director, General Aviation Division, Defense Transportation Administration	110
Geuting, Joseph T., Jr., Aircraft Industries Association, Inc	29
Griffin, John T., vice president, National Aviation Trades Association	88
Horne, Charles, Administrator, Civil Aeronautics Administration	118
Jolly, Lester O., commissioner, North Dakota Aeronautics Commission	77
O'Brien, Joseph L., Airline Personnel Relations Conference	58
Patterson, William F., Director, Bureau of Apprenticeship, United States Department of Labor	67
Rentzel, Delos W., vice president, W. R. Grace & Co., New York City	129
Schweizer, Paul A., secretary, Soaring Society of America	84
Tipton, S. G., general counsel, Air Transport Association of America	53
Vavra, Harold G., director, North Dakota Aeronautics Commission	77
Webster, Donald, general manager, National Aeronautic Association	83
Additional information submitted for the record by—	
Aeronautical Training Society:	
Statistics for CAA certificated mechanic schools—Compiled from January 1, 1952, reports, table	36
What the airmen's training bills could accomplish with an $18,000,000 appropriation	39
Airport Operators Council:	
Letter from Louis R. Inwood, president	47
List of members, March 1, 1952	48
American Association of Airport Executives, statement of	139
American Legion, letter from Mr. Miles Kennedy, director, National Legislative Commission, transmitting resolution	47
Bahnman, H. W., letter from	50
Civil Aeronautic Administration, letter from Wiley R. Wright, Director, Office of Aviation Development	101
Commerce Department, letter from Thos. W. S. Davis, Acting Secretary	144
Illinois Department of Aeronautics, statement by Joseph K. McLaughlin, director	49
Minnesota Aeronautics Commission, statement of L. L. Schroeder, commissioner	141
National Association of State Aviation Officials, letter from C. E. A. Brown, president	48
National Aviation Trades Association, articles and editorials from various newspapers	95

CIVILIAN AVIATION PERSONNEL TRAINING

MONDAY, APRIL 28, 1952

HOUSE OF REPRESENTATIVES,
COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
Washington, D. C.

The committee met at 10 a. m., Hon. Lindley Beckworth (acting chairman) presiding.

Mr. BECKWORTH. The committee will come to order.

We have before us at this time two bills that would aid in meeting the defense mobilization requirements of the United States by providing for the training or retraining of civilian aviation personnel.

We will insert the two bills in the record at this time with suggested amendments by the Department of the Air Force, along with the reports of the Department of Commerce, the Civil Aeronautics Board, National Security Resources Board, Federal Security Administration, the Department of Labor, the Office of Defense Mobilization, and the Department of Justice.

(The bills and reports above referred to are as follows:)

[H. R. 7073, 82d Cong., 2d sess.]

A BILL To aid in meeting the defense mobilization requirements of the United States by providing for the training or retraining of civilian aviation personnel

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Aviation Training Act of 1952".

SEC. 2. It is the purpose of this Act to provide Federal assistance in supplynig necessary skilled aviation manpower through the training of aircraft and engine mechanics, aviation instrument and electronic technicians, pilots, and such other flight and ground personnel as may be deemed necessary in order to establish and maintain a body of trained aviation manpower sufficient to meet the defense mobilization requirements of the United States.

SEC. 3. In order to carry out the purpose of this Act, the Secretary of Commerce is authorized, to the extent he deems it necessary and within the limits of appropriations made available by the Congress, to enter into contracts with public and private training agencies and institutions for the training of aircraft and engine mechanics, aviation instrument and electronics technicians, pilots, and other flight and ground personnel, obligating the United States to pay a portion not to exceed 75 per centum of the cost of such training for each trainee.

SEC. 4. In determining the numbers and categories of persons to be trained under this Act, the Secretary of Commerce shall consult with and consider such recommendations as may be made by the Secretary of Defense, the Secretary of Labor, the National Security Resources Board, and the Office of Defense Mobilization.

SEC. 5. In carrying out his functions under this Act, the Secretary of Commerce is authorized to exercise any of the powers conferred upon him by the Civil Aeronautics Act of 1938 which are appropriate in connection with the programs of training contracted for under section 3 of this Act, without regard to section 3709 of the Revised Statutes of the United States.

SEC. 6. (a) The programs of training contracted for under section 3 of this Act shall be conducted in accordance with such regulations as the Secretary of Commerce may prescribe, but—

(1) not less than 5 per centum of the students selected for training shall be selected from applicants other than high school and college students;

(2) no person shall be accepted for training unless he furnishes assurance satisfactory to the Secretary of Commerce that upon completion of such training he will engage in or remain available for aviation employment or service;

(3) no public or private training agency or institution shall be approved to provide training under this Act unless—

(A) it holds the necessary or usual licenses and certificates from the appropriate Federal and State authorities; and

(B) it meets such other standards as the Secretary of Commerce may prescribe with respect to (i) the ratio of qualified graduates to entrants, (ii) the initial license or certificate rate of failure of graduates, (iii) curriculum, (iv) faculty, (v) its educational and other facilities and materials, and (vi) such other matters as he may find to be appropriate.

(b) Nothing in this subsection shall preclude the Secretary of Commerce from entering into a contract with any public or private agency or institution when he determines that such agency or institution will meet the standards established by or pursuant to this Act.

SEC. 7. (a) Any person who knowingly and willfully makes, files, or otherwise employs any false statement, report, account, or record, in connection with any matter arising under this Act shall be deemed guilty of a misdemeanor and shall, for each offense, be fined not more than $5,000 or imprisoned for not more than two years, or both.

(b) Any contract with a training agency or institution may be canceled by the Secretary upon thirty days' notice whenever he finds that the standards prescribed by him are not being maintained by such agency or institution, or whenever such agency or institution has been convicted of a violation of subsection (a) of this section.

SEC. 8. There is hereby authorized to be appropriated (a) the sum of $ to carry out this Act during the first fiscal year which begins on or after the date of the enactment of this Act, and (b) such additional sums as may be necessary to carry out this Act during fiscal years following such first fiscal year. No part of the funds appropriated pursuant to this section shall be used for the construction or equipment of training facilities or for the acquisition of land or the construction of improvements on land; but nothing in this section shall be construed to preclude any department or agency of the Federal Government from furnishing or lending training equipment or aids, with the approval of the Secretary of Commerce, to any training agency or institution with which the Secretary of Commerce has entered into a contract pursuant to section 3 of this Act.

DEPARTMENT OF THE AIR FORCE,
OFFICE OF THE SECRETARY,
Washington, April 26, 1952.

HON. ROBERT CROSSER,
Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives.

DEAR MR. CHAIRMAN: I refer to your request for the views of the Department of Defense on H. R. 7073, a bill to aid in meeting the defense mobilization requirements of the United States by providing for the training or retraining of civilian aviation personnel. The Secretary of Defense has assigned to the Department of the Air Force responsibility for providing your committee with a report on this legislation on behalf of the Department of Defense.

The purpose of H. R. 7073 is to authorize the Secretary of Commerce to conduct a program for the training of aircraft and engine mechanics, aviation instrument and electronic technicians, pilots, and such other flight and ground personnel as may be deemed necessary in order to establish and maintain a body of trained aviation manpower sufficient to meet the defense mobilization requirements of the United States. Authority would be given to the Secretary of Commerce to enter into contracts with public and private training agencies and institutions for the necessary training, obligating the United States to pay a portion not to exceed 75 percent of the cost of such training for each trainee.

It is the understanding of the Department of Defense that this bill is intended to meet the requirements of the civil aviation industry for trained manpower, and does not have as its purpose the meeting of military requirements. If the latter purpose were included, the Department of Defense would be constrained to recommend against the enactment of H. R. 7073 from a military point of view, both as a means of training technicians and mechanics for military utilization, and insofar as it applies to flight training.

In order for the Department of Defense to endorse programs involving flight training to meet military requirements, the input must be limited to those individuals who satisfy current aviation cadet eligibility criteria and who have made specific application for entry into the aviation cadet program. In addition, the total number of applicants involved must be limited to and compatible with projected aviation cadet requirements. This is the purpose of H. R. 1168 and S. 325, Eighty-second Congress, bills to provide for a Reserve Officers' Training Corps, and for other purposes, now before the Congress. Furthermore, current military requirements for technically trained personnel are satisfied in service schools.

In order to make it clear that the purpose of H. R. 7073 has as its sole objective the meeting of civilian-defense mobilization requirements as opposed to military requirements, it is suggested that the bill be amended to insert the word "civilian" in three places, as follows: Page 1, line 3, before the word "aviation"; as the first word of the title of the act; page 1, line 6, between the words "skilled" and "aviation"; and page 2, line 1, before the word "defense".

It is an undisputed fact that in time of total mobilization the existence of an active and fully manned civil aviation industry is essential in fulfilling national mobilization requirements. However, the question of subdization of the civilian aviation industry to the extent of paying for the training of civilian manpower is considered to be a matter of national policy within the discretion of the Congress. Accordingly, the Department of Defense has no further comment or recommendation to make with regard to the subject bill.

The Department of Defense is unable at this time to make any accurate appraisal of the probable fiscal effects of this bill in the event of enactment.

This report has been coordinated among the departments and boards of the Department of Defense in accordance with procedures prescribed by the Secretary of Defense.

The Bureau of the Budget has advised that there is no objection to the submission of this report.

Sincerely yours,

ROBERT E. L. EATON,
Brigadier General, United States Air Force,
Director, Legislation and Liaison.

[H. R. 7074, 82d Cong., 2d sess.]

A BILL To aid in meeting the defense mobilization requirements of the United States by providing for the training or retraining of civilian aviation personnel

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Aviation Training Act of 1952".

SEC. 2. It is the purpose of this Act to provide Federal assistance in supplying necessary skilled aviation manpower through the training of aircraft and engine mechanics, aviation instrument and electronic technicians, pilots, and such other flight and ground personnel as may be deemed necessary in order to establish and maintain a body of trained aviation manpower sufficient to meet the defense mobilization requirements of the United States.

SEC. 3. In order to carry out the purpose of this Act, the Secretary of Commerce is authorized, to the extent he deems it necessary and within the limits of appropriations made available by the Congress, to enter into contracts with public and private training agencies and institutions for the training of aircraft and engine mechanics, aviation instrument and electronics technicians, pilots, and other flight and ground personnel, obligating the United States to pay a portion not to exceed 75 per centum of the cost of such training for each trainee.

SEC. 4. In determining the numbers and categories of persons to be trained under this Act, the Secretary of Commerce shall consult with and consider such recommendations as may be made by the Secretary of Defense, the Secretary of Labor, the National Security Resources Board, and the Office of Defense Mobilization.

SEC. 5. In carrying out his functions under this Act, the Secretary of Commerce is authorized to exercise any of the powers conferred upon him by the Civil Aeronautics Act of 1938 which are appropriate in connection with the programs of training contracted for under section 3 of this Act, without regard to section 3709 of the Revised Statutes of the United States.

SEC. 6. (a) The programs of training contracted for under section 3 of this Act shall be conducted in accordance with such regulations as the Secretary of Commerce may prescribe, but—

(1) not less than 5 per centum of the students selected for training shall be selected from applicants other than high school and college students;

(2) no person shall be accepted for training unless he furnishes assurance satisfactory to the Secretary of Commerce that upon completion of such training he will engage in or remain available for aviation employment or service;

(3) no public or private training agency or institution shall be approved to provide training under this Act unless—

(A) it holds the necessary or usual licenses and certificates from the appropriate Federal and State authorities; and

(B) it meets such other standards as the Secretary of Commerce may prescribe with respect to (i) the ratio of qualified graduates to entrants, (ii) the initial license of certificate rate of failure of graduates, (iii) curriculum, (iv) faculty, (v) its educational and other facilities and materials, and (vi) such other matters as he may find to be appropriate.

(b) Nothing in this subsection shall preclude the Secretary of Commerce from entering into a contract with any public or private agency or institution when he determines that such agency or institution will meet the standards established by or pursuant to this Act.

SEC. 7. (a) Any person who knowingly and willfully makes, files, or otherwise employes any false statement, report, account, or record, in connection with any matter arising under this Act shall be deemed guilty of a misdemeanor and shall, for each offense, be fined not more than $5,000 or imprisoned for not more than two years, or both.

(b) Any contract with a training agency or institution may be cancelled by the Secretary upon thirty days notice whenever he finds that the standards prescribed by him are not being maintained by such agency or institution, or whenever such agency or institution has been convicted of a violation of subsection (a) of this section.

SEC. 8. There is hereby authorized to be appropriated (a) the sum of $ to carry out this Act during the first fiscal year which begins on or after the date of the enactment of this Act, and (b) such additional sums as may be necessary to carry out this Act during fiscal years following such first fiscal year. No part of the funds appropriated pursuant to this section shall be used for the construction or equipment of training facilities or for the acquisition of land or the construction of improvements on land; but nothing in this section shall be construed to preclude any department or agency of the Federal Government from furnishing or lending training equipment or aids, with the approval of the Secretary of Commerce, to any training agency or institution with which the Secretary of Commerce has entered into a contract pursuant to section 3 of this Act.

DEPARTMENT OF THE AIR FORCE,
OFFICE OF THE SECRETARY,
Washington, April 26, 1952.

HON. ROBERT CROSSER,
Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives.

DEAR MR. CHAIRMAN: I refer to your request for the views of the Department of Defense on H. R. 7074, a bill to aid in meeting the defense mobilization requirements of the United States by providing for the training or restraining of civilian aviation personnel. The Secretary of Defense has assigned to the Department of the Air Force responsibility for providing your committee with a report on this legislation on behalf of the Department of Defense.

The purpose of H. R. 7074 is to authorize the Secretary of Commerce to conduct a program for the training of aircraft and engine mechanics, aviation instrument and electronic technicians, pilots, and such other flight and ground personnel as may be deemed necessary in order to establish and maintain a body of trained

aviation manpower sufficient to meet the defense mobilization requirements of the United States. Authority would be given to the Secretary of Commerce to enter into contracts with public and private training agencies and institutions for the necessary training, obligating the United States to pay a portion not to exceed 75 percent of the cost of such training for each trainee.

It is the understanding of the Department of Defense that this bill is intended to meet the requirements of the civil aviation industry for trained manpower, and does not have as its purpose the meeting of military requirements. If the latter purpose were included, the Department of Defense would be constrained to recommend against the enactment of H. R. 7074 from a military point of view, both as a means of training technicians and mechanics for military utilization, and insofar as it applies to flight training.

In order for the Department of Defense to endorse programs involving flight training to meet military requirements, the input must be limited to those individuals who satisfy current aviation cadet eligibility criteria and who have made specific application for entry into the aviation cadet program. In addition, the total number of applicants involved must be limited to and compatible with projected aviation cadet requirements. This is the purpose of H. R. 1168 and S. 325, Eighty-second Congress, bills to provide for a Reserve Officers' Training Corps, and for other purposes, now before the Congress. Furthermore, current military requirements for technically trained personnel are satisfied in service schools.

In order to make it clear that the purpose of H. R. 7074 has as its sole objective the meeting of civilian defense mobilization requirements as opposed to military requirements, it is suggested that the bill be amended to insert the word "civilian" in three places, as follows: Page 1, line 3, before the word "aviation"; as the first word of the title of the act; page 1, line 6, between the words "skilled" and "aviation"; and page 2, line 1, before the word "defense."

It is an undisputed fact that in time of total mobilization the existence of an active and fully manned civil aviation industry is essential in fulfilling national mobilization requirements. However, the question of subsidization of the civilian aviation industry to the extent of paying for the training of civilian manpower is considered to be a matter of national policy within the discretion of the Congress. Accordingly, the Department of Defense has no further comment or recommendation to make with regard to the subject bill.

The Department of Defense is unable at this time to make any accurate appraisal of the probable fiscal effects of this bill in the event of enactment.

This report has been coordinated among the departments and boards of the Department of Defense in accordance with procedures prescribed by the Secretary of Defense.

The Bureau of the Budget has advised that there is no objection to the submission of this report.

Sincerely yours,

ROBERT E. L. EATON,
Brigadier General,
Director, Legislation and Liaison.

THE SECRETARY OF COMMERCE,
Washington, May 1, 1952.

Hon. ROBERT CROSSER,
Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives, Washington 25, D. C.

DEAR MR. CHAIRMAN: In accordance with your requests of March 19 and 20, 1952, the Department of Commerce transmits herewith its comments on H. R. 7073 and H. R. 7074, bills which would aid in meeting the defense mobilization requirements of the United States by providing for the training or retraining of civilian aviation personnel. Included also are our comments on H. R. 1521, S. 434, S. 507, S. 2803, and S. 2892, bills with similar objectives.

The Bureau of the Budget advises that there is no objection to the submission of this report, although enactment of these bills would not be in accord with the program of the President.

Sincerely yours,

THOS. W. S. DAVIS,
Acting Secretary of Commerce.

Report of the Department of Commerce on S. 434, S. 507, S. 2803, S. 2892, H. R. 1521, H. R. 7073, and H. R. 7074

Each of these bills would establish a Federal aviation training program.

S. 434, S. 507, and H. R. 1521 would each provide the Secretary of Commerce with general authority to train aircraft mechanics, technicians, and pilots directly or through contracts with educational institutions and others. Except for some descriptive language in the caption of S. 507, the bills contain no limitation on the extent of the program other than the limits of available appropriations.

S. 2803, S. 2892, H. R. 7073, and H. R. 7074 would each establish a program, more finite both as to scope and extent. Since, in our opinion, the existing and reserve personnel requirements of civil aviation could be supplied if one of these bills were enacted, there would be, in that event, no need for the broader authority that would be provided in the three bills first discussed.

S. 2803 is similar to S. 2892, which, in turn, varies only slightly from the two two identical House bills, H. R. 7073 and H. R. 7074.

The differences in language between these three similar versions are, except with respect to appropriation authorization, not substantial. All would limit the program to training civilians to meet civilian industry needs; in S. 2803 and S. 2892 through direct language in the legislative statement of purpose; and under H. R. 7073 and H. R. 7074 through the practical effect of the provision of all the bills that the Government contribution for training should not exceed 75 percent of the cost.

The bills contain many desirable features measured in terms of the current need and Government experience with other aviation-education programs.

There is a present, serious, substantial shortage of aviation mechanics and, in lesser degree, of other aeronautical specialists. The personnel requirements of present mobilization plans for the civil aeronautical industries are far beyond present personnel supplies. Several factors have contributed to these shortages. Many of these skilled technicians were in the Armed Forces Reserves and have been called up. The operation of the Selective Service System has made further inroads in existing labor supplies. Aviation is expanding and will have to expand even further in the event of a greater emergency. The existing labor force has thus been, and will continue to be, spread very thin. It is difficult to interest qualified persons to enter the long and expensive training program necessary to prepare for these occupations. It takes, for example, 18 months and costs about $1,500 in tuition alone to train an aviation mechanic. Most persons with that much time and money are disposed to educate themselves out of "blue collar" employment. With well-paying jobs relatively easy to obtain in these times of widespread full employment, qualified persons would rather work and receive income than train and incur expense.

S. 2803, S. 2892, H. R. 7073, and H. R. 7074 are well designed to meet existing needs in the most efficient manner.

Under all bills, training would be conducted, not by the Federal Government, but by qualified schools, with Government assistance. The extent of the program would be limited, not only by congressional appropriations, but by industry manpower needs as determined through reference to the combined knowledge and experience of the Secretary of Defense, the Secretary of Labor, the National Security Resources Board, the Office of Defense Mobilization, and the Secretary of Commerce.

Government contribution to the cost of each trainee's education would be limited to 75 percent and, presumably, require the student to furnish the balance. The fully paid-for veterans' education program failed to return to the industries a substantial proportion of those trained. A student with an investment in his own training would be more likely than one whose education has been completely subsidized to make the fullest use of his training. A further assurance of the good faith of the persons who would be trained under this legislation is the requirement in the bills that they furnish assurance that they will remain in aviation.

All these four bills require application of strict standards in the choice of schools to be used for the program. These provisions will help eliminate from the program schools of marginal educational standards. At the same time, under any of the bills, new schools that meet the prescribed standards would be eligible to participate.

Criminal penalties and termination of contracts are provided as deterrents to fraudulent practices in connection with the program.

In summary, we believe that either S. 2803, S. 2892, H. R. 7073, or H. R. 7074 would provide a valuable and efficient program to supply a grave public need.

With respect to the extent of the proposed program that would be established under these bills, this Department has received a tabulation prepared by industry sources which indicate that the following shortages will exist to meet manpower mobilization needs as of 1954:

Aircraft and engine mechanics	15,000
Instrument technicians	1,000
Electronic technicians	1,000
Pilot instructors	2,000
Instrument pilots	2,000
Commercial pilots	2,000

The cost of Government participation in the training of these numbers of these classes of persons under the program that would be established under these bills, together with this Department's administrative expenses, would be approximately $18,000,000.

These figures appear to be reasonable. However, in order to supply the Congress with accurate, up-to-the-minute statistics, broken down as to existing needs and potential mobilization needs, this Department has undertaken a Nation-wide survey of aeronautical manpower requiremens which, it is hoped, will be available for consideration by the Congress in determining the extent of the program which would be authorized under this legislation. Until that survey is completed, and until we are informed as to the proportion of the total mobilization needs of the Nation which it is deemed appropriate to supply during the next fiscal year, we have no recommendation as to the amounts which should be appropriated to carry this program into effect.

CIVIL AERONAUTICS BOARD,
Washington 25, April 22, 1952.

Hon. ROBERT CROSSER,
Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives, Washington, D. C.

DEAR MR. CROSSER: This is in reply to your letters of March 20, 1952, asking or a report on H. R. 7073 and H. R. 7074, bills to aid in meeting the defense mobilization requirements of the United States by providing for the training or retraining of civilian aviation personnel.

This legislation falls primarily within the jurisdiction of the Department of Commerce, which would administer the program. While the Board has no objection to the enactment of either bill, it believes that the need for such training can be more appropriately appraised by the Departments of Commerce and Defense, and therefore expresses no opinion as to such need. Should the legislation be enacted, however, the Board believes that provision for insuring the trainees should be included.

Because of time limitations this report has not been cleared with the Bureau of the Budget for advice as to its relation to the program of the President.

Sincerely yours,

DONALD W. NYROP, *Chairman.*

EXECUTIVE OFFICE OF THE PRESIDENT,
NATIONAL SECURITY RESOURCES BOARD,
Washington, D. C., April 25, 1952.

Hon. ROBERT CROSSER,
Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives, Washington 25, D. C.

DEAR MR. CROSSER: This is in further reply to your letters of March 20, 1952, inviting me to comment concerning the bills H. R. 7073 and 7074, to aid in meeting the defense mobilization requirements of the United States by providing for the training or retraining of civil aviation personnel.

Resources Board studies indicate that in event of full-scale mobilization there would be a shortage of trained flight and mechanical personnel for civil aviation. This would be due in part to inevitable military demands upon the available civilian supply and in part to personnel requirements for operating the civil air reserve fleet and for maintaining the air transport system and other civilian aviation services essential to meet war needs.

To overcome such threatened shortage, so far as may be, it is important to (1) maintain the peacetime supply of trained personnel at practicable levels and (2)

have in being the school facilities necessary for training in emergency. These appear to be the main purposes of the proposed legislation.

There are indications of a current shortage of skilled manpower in civil aviation but data are not available as to the extent of this shortage. While the passage of this legislation would probably help alleviate any shortage, it has not been established that it would be a preferred method of meeting the current problem or any possible full mobilization shortages.

At our request, the Defense Air Transportation Administration of the Department of Commerce is developing pertinent information, including estimates with respect to the number of skilled personnel needed by the aviation industry for the next few years and possible steps to meet these needs.

Such information will both provide data for a program to meet current needs and afford a basis for estimating the practical possibilities of maintaining in being civilian training schools and other facilities against the contingency of full-scale mobilization.

The data, when developed, presumably will be made available by the Defense Air Transportation Administration to your committee and should provide valuable information for consideration of the proposed legislation.

We are advised by the Bureau of the Budget that there is no objection to the submission of this report and that, on the basis of information now available, the enactment of this legislation would not be in accord with the program of the President.

Sincerely,

JACK GORRIE, *Chairman.*

FEDERAL SECURITY AGENCY,
Washington, April 28, 1952.

Hon. ROBERT CROSSER,
Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives, Washington, D. C.

DEAR MR. CHAIRMAN: This letter is in response to your requests of March 20, 1952, for reports on H. R. 7073 and H. R. 7074, identical bills, to aid in meeting the defense mobilization requirements of the United States by providing for the training or retraining of civilian aviation personnel.

These bills declare a policy of providing Federal assistance in supplying necessary skilled aviation manpower "through the training of aircraft and engine mechanics, aviation-instrument and electronic technicians, pilots, and such other flight and ground personnel as may be deemed necessary in order to establish and maintain a body of trained aviation manpower sufficient to meet the defense mobilization requirements of the United States." For these purposes, the Secretary of Commerce would be authorized to enter into contracts with public and private training agencies and institutions for the training of such skilled aviation personnel, "obligating the United States to pay a portion not to exceed 75 per cent of the cost of such training for each trainee."

In determining the numbers and categories of persons to be trained, the Secretary of Commerce would have to consult with and consider such recommendations as may be made by the Secretaries of Defense and Labor, the National Security Resources Board, and the Office of Defense Mobilization. Training programs would have to be conducted in accordance with regulations prescribed by the Secretary of Commerce, and would have to meet certain specific requirements of the bill, including standards for approval of training schools and the giving of assurance that the trainee will, upon completion of his training, engage in or remain available for aviation employment or service. Contracts with training agencies or institutions would be cancelable by the Secretary if, among other things, standards prescribed by him are not maintained by the agency.

Provision is made for a ceiling on the authorized appropriation for the first fiscal year after enactment, but the amount of the ceiling is left blank in the bills as introduced. While the funds could not be used for the construction or equipment of training facilities or for the acquisitoin of land or construction of improvements thereon, this prohibition would not preclude any Federal agency from furnishing or lending training equipment or aids, with the approval of the Secretary, to any training agency or institution with which the Secretary has a contract under the act.

The need for special Federal assistance in the training of civilian aviation personnel is open to serious question. No evidence is available to this Agency to indicate that there is at present a shortage of training facilities or of trainees for the various skills involved in civilian flight training.

If the purpose of the program is to take a large number of men through a basic training course as pilots, mechanics, and technicians, with no expectation of immediately employing them, then the proposal is open to serious objection. Vocational education experience demonstrates the fact that specific occupational skills which are not employed are speedily lost by a trainee.

If the principal purpose of the proposal is to develop a backlog of trained men for military purposes, then it would seem that the military authorities should provide the training as a part of the military program.

Insofar as a program of training ground crews for normal replacement in the civilian air services is necessary, the instant proposal is a duplication of services now being provided by the public vocational schools under the Smith-Hughes and George-Barden Acts. Some 30 public vocational schools are now operating courses approved by the Civil Aeronautics Administration to train licensed aircraft-engine-maintenance mechanics. Other public vocational schools in 1951 trained 31,608 workers for aircraft manufacturing trades. Although requests for training increased numbers of aircraft manufacturing workers have been received from a few aircraft manufacturing centers, these can be handled satisfactorily through the regular federally aided vocational training program administered by the Federal Security Agency, Office of Education.

If the national security now requires a great expansion in training for flight and ground crews, as well as for many other military and nonmilitary occupations, it would seem unwise to fractionalize the Federal responsibility for the total training program. All such operations should make use of existing agencies and authority. Specifically, education and training for military pilots should be carried out in military flight training centers and through the expansion of AROTC, while training for ground crews and technicians should be carried out through the proper educational institutions and services. At the Federal level, the Federal Security Agency, Office of Education, should be the channel of approach to the schools and colleges of the Nation. The proliferation of operating programs in the field ought not to be accompanied by the magnifying of jurisdictional difficulties and the confusing of administrative operations at the Federal level.

For the foregoing reasons, we do not believe that this proposed legislation should be enacted into law in its present form.

We are advised by the Bureau of the Budget that, on the basis of information so far presented, enactment of these bills would not be in accord with the program of the President.

Sincerely yours,

JOHN L. THURSTON,
Acting Administrator.

DEPARTMENT OF LABOR,
OFFICE OF THE SECRETARY,
Washington, May 5, 1952.

Hon. ROBERT CROSSER,
Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives, Washington, D. C.

DEAR CONGRESSMAN CROSSER: This is in reference to your request for my comments on H. R. 7073 and H. R. 7074, two bills "to aid in meeting the defense-mobilization requirements of the United States by providing for the training or retraining of civilian aviation personnel."

It is requested that the testimony, which Mr. William F. Patterson, Director of the Bureau of Apprenticeship, Department of Labor, presented on April 29, 1952, be regarded as in response to your request.

Yours very truly,

MAURICE J. TOBIN,
Secretary of Labor.

EXECUTIVE OFFICE OF THE PRESIDENT,
OFFICE OF DEFENSE MOBILIZATION,
Washington, D. C., May 2, 1952.

Hon. ROBERT CROSSER,
Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives, Washington, D. C.

DEAR MR. CROSSER: This will acknowledge your letters of March 20, 1952, to Mr. Charles E. Wilson, with which you enclosed copies of H. R. 7073, and H. R. 7074, similar bills to provide for the defense-mobilization requirements of the

United States by training of civilian aviation personnel. The Committee on Interstate and Foreign Commerce requests my views on the merits of the proposed legislation.

The purpose of the proposed acts, as stated in section 2, is to provide Federal assistance to supply necessary skilled manpower through the training of civilian aviation mechanics, technicians, pilots, and other flight and ground personnel whenever necessary to maintain essential aviation industries at the level required to meet the defense mobilization requirements of the United States.

Under section 3 of each bill the Secretary of Commerce would be authorized to conduct the program and to enter into contracts with approved schools obligating the Government to pay for a portion, not exceeding 75 percent of such training. Section 8 of the bills would authorize an unstated sum to be appropriated for the purpose of carrying out the provisions of the acts during fiscal year 1953, and a sum not greater than this to carry out the program during three subsequent fiscal years.

Generally speaking, the manpower problems of the aviation industry should be considered in relation to the manpower policies that have been and are being developed for the Nation's economy as a whole. In this regard, reference is made to Defense Manpower Policy No. 5 issued by the Office of Defense Mobilization and effective March 31, 1952, setting forth the policy of the Federal Government and the responsibilities of the agencies of Government for defense training. Among other things, that policy statement indicated in general that the responsibility for such training as would be provided by the proposed legislation is presently an obligation of the industry, subject to leadership and advisory assistance by Federal agencies. It therefore appears that the program contemplated by H. R. 7073 and H. R. 7074 would conflict with the principles of Defense Manpower Policy No. 5, copy of which is enclosed for your information.

It is the view of this Office that the proposed departure from the industry's normal training relationships, and the undertaking by the Federal Government of financial responsibility for such training, is not necessary at this particular time.

In view of the above, it is the opinion of this Office that H. R. 7073 and H. R. 7074 should not be enacted.

The Bureau of the Budget has advised that it has no objection to this report.

Sincerely yours,

JOHN R. STEELMAN.

EXECUTIVE OFFICE OF THE PRESIDENT, OFFICE OF DEFENSE MOBILIZATION

DEFENSE MANPOWER POLICY NO. 5

Subject: Policy on Defense Training.

I. Introduction

The defense mobilization program is based on the assumption that such a program will be necessary over a long period of time. Right now we are confronted with serious manpower shortages in certain skilled occupations and in scientific, technical, and engineering personnel. These shortages will become even more serious in the years which lie immediately ahead. If we are to prevent a breakdown in our defense-mobilization program in the future, we must accelerate training programs for persons in these areas. A year from now, or even 6 months from now, will be too late. It is the responsibility of the Government to exercise the leadership which will result in an effective concentration of all of our training resources on this all-important problem.

The vast majority of workers are normally trained by employers through short-term and apprenticeship on-the-job training and by public vocational schools and private institutions. The small but highly important group of scientific, technical, and engineering personnel are normally trained by colleges and institutions of higher education. If there is to be an immediate attack on the present and increasingly more difficult problem of skill shortages, present training programs must be intensified at this time, and this increased training must be done in major degree by industry using its own and other normal training resources. In addition, the existing facilities of private and public institutions of higher education must be utilized to the fullest extent by increased enrollments of scientific, technical, and engineering personnel.

II. Purpose

The objective of this statement is to set forth the policy of the Federal Government and the responsibilities of the agencies of government for defense training under existing authority and resources, and for the following purposes:

A. To make an advance determination locally, regionally, and nationally of defense-training needs by occupation and skill.

B. To insure that manpower is trained in the required skills and occupations in adequate numbers, and in the areas where and when needed to meet defense mobilization goals.

C. To insure realistic training programs tailored to actual needs.

III. Policy

A. In order to achieve the above-stated objectives, the policy of the Federal Government is:

1. To encourage industry to expand existing training programs and initiate new or additional training programs in the required key occupations.

2. To increase the voluntary cooperation between labor and management in local communities in the development of needed training programs and utilization of existing public and private resources to operate these training programs.

3. To offer assistance within the limits of existing facilities to industry, states, and local communities in carrying out the requested training programs.

4. To assure that all trainees on the job at all times enjoy working conditions that are in conformity with accepted labor standards as set forth by law, Executive order, or collective-bargaining agreements.

IV. Implementation

In order to carry out this policy and achieve the objectives set forth herein, the following assignments of responsibilities are made to the specified departments and agencies of the Government:

A. The Department of Labor shall:

1. Request Area Labor-Management Manpower Committees to:

(*a*) Provide leadership to communities to assure the needed cooperation of all concerned to expedite the needed training;

(*b*) Evaluate the training problems of the community and the resources available to expedite training;

(*c*) Urge employers, schools, colleges, and other training services to do all possible toward the solution of the problem.

2. Identify occupations for which labor is in short supply or is expected to be in short supply and for which training programs are therefore needed. Where required in order to so identify such occupations, consult with agencies represented on Regional Defense Mobilization Committees and Labor-Management Committees on area, regional, and national levels;

3. Make assistance available to manpower users to develop on-the-job and apprentice training programs for improving the skill of the work force;

4. Inform appropriate agencies of the need for defense training; and

5. Conduct periodic reviews to determine if progress is being made in alleviating shortages.

B. All production and procurement agencies shall:

1. Encourage defense contractors to initiate training programs in cooperation with manpower and training agencies to meet present and foreseeable requirements as the shortage in the supply of trained workers becomes progressively tighter;

2. In any particular labor-market area in which demands for defense training are greater than can be provided by existing training facilities, and as a guide to determination of training priority, provide through regional defense mobilization committees to the appropriate manpower agencies information on the relative importance of defense material being produced in the area.

3. Call to the attention of the contractor and appropriate manpower agencies instances coming to their attention of current or impending production difficulties which may be alleviated by assistance in setting up training programs;

4. Furnish such information with regard to future procurement needs as will enable defense contractors and the Department of Labor to provide advance estimates of training needs by occupations.

C. Federal Security Agency shall:

Render leadership and assistance to appropriate agencies and educational institutions in providing training requiring the use of educational facilities. The

Office of Education will collaborate with the State boards for vocational education and institutions of higher education in facilitating the development of training programs which will make a direct contribution to defense production.

D. Civil Service Commission shall:

In cooperation with the Department of Labor and the Federal Security Agency provide advice and assistance to Federal agencies for training of those Federal employees directly engaged in defense activities.

E. The Department of Agriculture shall:

Render leadership and technical assistance to those agencies and educational institutions with which the Department of Agriculture normally deals, including recommendations of standards for evaluating the quality of training proposed and conducted.

V. This Order shall take effect on March 31, 1952.

OFFICE OF DEFENSE MOBILIZATION,
CHARLES E. WILSON, *Director.*

DEPARTMENT OF JUSTICE,
OFFICE OF THE DEPUTY ATTORNEY GENERAL,
Washington, May 19, 1952.

Hon. ROBERT CROSSER,
Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives, Washington, D. C.

MY DEAR MR. CHAIRMAN: This is in response to your request for the views of the Department of Justice relative to the identical bills (H. R. 7073 and H. R. 7074) to aid in meeting the defense mobilization requirements of the United States by providing for the training or retraining of civilian aviation personnel.

These measures, each of which provides that it is to be known as the Aviation Training Act of 1952, would authorize the Secretary of Commerce to enter into contracts with public and private training agencies and institutions for the training of flight and ground aviation personnel, obligating the United States to pay up to 75 percent of the cost of such training for each trainee.

Section 7 (a) of each of the bills would provide that—

"Any person who knowingly and willfully makes, files, or otherwise employs any false statement, report, account, or record, in connection with any matter arising under this Act shall be deemed guilty of a misdemeanor and shall, for each offense, be fined not more than $5,000 or imprisoned for not more than two years, or both."

Subsection (b) would provide for the cancellation by the Secretary of Commerce of any contract with a training agency or institution whenever he finds that the standards prescribed by him are not being maintained by such agency or institution, "or whenever such agency or institution has been convicted of a violation of subsection (a) of this section."

Whether or not either of these measures should be enacted constitutes a question of legislative policy concerning which the Department of Justice prefers not to make any recommendation. However, with respect to the provisions of section 7 thereof, the attention of the committee is invited to section 1001 of title 18, United States Code, which provides:

"Whoever, in any matter within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up by any trick, scheme, or device a material fact, or makes any false, fictitious, or fraudulent statements or representations, or makes or uses any false writing or document knowing the same to contain any false, fictitious, or fraudulent statement or entry, shall be fined not more than $10,000 or imprisoned not more than five years, or both."

It would seem that in view of the provisions of section 1001 of title 18 there is no need for the enactment of section 7 (a) of the bills. Furthermore, it is considered desirable to have criminal laws enacted as part of title 18 of the United States Code. Also, it should be noted that in declaring offenses under the act misdemeanors punishable by imprisonment for not more than 2 years, the measures are inconsistent with section 1 of title 18 which provides that notwithstanding any act of Congress to the contrary, any offense punishable by imprisonment for a term exceeding 1 year is a felony.

Accordingly, if either of these measures is favorably reported and the suggestion herein made favorably received, it will become necessary to delete the words "subsection (a) of this section" from line 22 of page 4 and to substitute the words "section 1001 of title 18 of the United States Code."

The Bureau of the Budget has advised that there is no objection to the submission of this report but enactment of the bills, on the basis of information thus far presented, would not be in accord with the program of the President.

Sincerely,

A. DEVITT VANECH,
Deputy Attorney General.

Mr. BECKWORTH. The renewal would not necessarily imply that the program would be exactly like the old program. Rather, I would think that the committee would like, in writing such legislation, to write a bill that would emphasize those phases of the training that we would regard as most successful and that were regarded as most successful and helpful, and that we would try to have that kind of program, keeping in mind the needs of the Nation at this time.

It is my understanding that one of the witnesses, Gen. Gabriel P. Disosway, will have to be away in the very near future and that he would like to appear first.

We shall be glad to have General Disosway appear at this time.

STATEMENT OF GEN. GABRIEL P. DISOSWAY, DIRECTOR OF TRAINING, HEADQUARTERS, UNITED STATES AIR FORCE

General DISOSWAY. Mr. Chairman, I am Director of Training, and I have Colonel Bridges with me from the Mobilization Planning Department of the Air Force, in case there are any questions you wish to ask him.

I have a statement here from the Department of Defense, and with your permission, I will read it.

Mr. Chairman, section 2 of H. R. 7073 and H. R. 7074, identical bills "to aid in meeting the defense mobilization requirements of the United States by providing for the training or retraining of civilian aviation personnel," states as the purpose of the bills the providing of Federal assistance in supplying necessary skilled aviation manpower through the training of aircraft and engine mechanics, aviation instrument and electronic technicians, pilots, and such other flight and ground personnel as may be deemed necessary in order to establish and maintain a body of trained aviation manpower sufficient to meet the defense-mobilization requirements of the United States. Authority would be given to the Secretary of Commerce to enter into contracts with public and private training agencies and institutions for the necessary training, obligating the United States to pay a portion not to exceed 75 percent of the cost of such training for each trainee.

It is the understanding of the Department of Defense that the training authorized in these bills is intended to meet the requirements of the civil aviation industry for trained manpower, and does not have as its purpose the meeting of military requirements. However, the language, "to establish and maintain a body of trained aviation manpower sufficient to meet the defense-mobilization requirements of the United States," might be construed as authorizing a program of training to the extent needed to meet future requirements for trained men by the Armed Forces.

In order to make it clear that the sole objective of H. R. 7073 and H. R. 7074 is the meeting of civilian defense mobilization requirements as opposed to military requirements, it is suggested that the bills be amended to insert the word "civilian" in three places, as follows: page 1, line 3, before the word "aviation", as the first word of the title of the act; page 1, line 6, between the words "skilled" and "aviation"; and page 2, line 1, before the word "defense."

If the purpose of meeting military requirements for trained personnel were included in subject bills, the Department of Defense would be constrained to recommend against enactment from a military point of view.

In order for the Department of Defense to endorse programs involving flight training as economically feasible, the input must be limited to those individuals who satisfy current aviation-cadet eligibility requirements and who have made specific application for entry into the aviation-cadet program. In addition, the total number of applicants involved must be limited to and compatible with

projected aviation-cadet requirements. Similarly, the Department of Defense would be constrained to oppose subject bills as a means of training a pool of technicans and mechanics for possible future military utilization. Any intangible return to the military from such a plan would be further diluted by aiming the training at individuals who may not be acceptable military material.

If the bills were construed as including the purpose of meeting military personnel requirements, such an objective would be paralleled generally by the purposes of our Reserve programs. The benefits of subject bills could hardly be compared in the face of the lack of an obligation on the part of individuals for either active duty or Reserve service.

With the amendments previously recommended to make it clear that H. R. 7073 and H. R. 7074 pertain solely to the meeting of civilian defense-mobilization requirements, the basic question remaining would be the subsidization of the civilian aviation industry to the extent of paying for the training of civilian manpower. This question is considered to be a matter of national policy within the discretion of the Congress and the Department of Defense has no comment or recommendation to make with regard to such a plan.

Mr. BECKWORTH. General Disosway, are you familiar with the civilian pilots training program that we had the last time?

General DISOSWAY. Not in any detail, Mr. Chairman.

Mr. BECKWORTH. Is there anyone here from the Air Force, that is, and if so, who is he?

General DISOSWAY. I could find someone who could answer those questions for you, Mr. Chairman.

Mr. BECKWORTH. Do you not believe that it would be pertinent when we are considering a piece of legislation like this?

General DISOSWAY. As I understand this bill, sir——

Mr. BECKWORTH. We do not want to get bound by our bills. Let us try to think of this matter as a subject matter proposition rather than as just one bill, because as you well know, as you write a bill it frequently comes out far different than the form in which it was introduced. We are interested primarily in the subject matter of civilian pilot training rather than one bill.

I want you to bear that in mind. I am speaking as one of the authors of these two bills that are in the committee.

You may proceed.

General DISOSWAY. Mr. Chairman, I was going to say, as far as the civilian training of pilots for the Air Force is concerned, we have a bill in Congress now that is awaiting hearing that would take care of our needs along those lines; that is, the military needs, and that is to put the flying in our ROTC program.

Mr. BECKWORTH. What bill is that, and who is the author of it? I assume that it must be in the Armed Services Committee.

General DISOSWAY. That is correct, sir. It is called the ROTC bill, H. R. 1168.

Mr. BECKWORTH. Has the Air Force definitely endorsed it?

General DISOSWAY. Yes. We are the executive agency for it and are trying to get hearings on it.

Mr. BECKWORTH. Have hearings been held on it?

General DISOSWAY. No, sir.

Mr. BECKWORTH. You are undertaking to get hearings?

General DISOSWAY. That is correct, but I think that in essence answers your question about the ROTC program.

Mr. BECKWORTH. I want to get the fellow who knows something about the results, whether good or bad, of the civil pilots training program, as it affected the Air Corps and military undertakings when we had the program before. When can we get him up here?

General DISOSWAY. I could have him here today.

Mr. BECKWORTH. I believe we need him.

General DISOSWAY. All right, sir.

Mr. BECKWORTH. In order to judge this problem we need somebody who knows something about what it was before.

General DISOSWAY. I will have someone over here, sir.

Mr. BECKWORTH. I believe that is very essential.

Mr. HINSHAW. I would like to ask the general whether or not he believes that the present reserve training program for enlisted men is adequate to meet the requirements of the Air Force for trained engine mechanics and technicians of various kinds.

General DISOSWAY. Under mobilization, Mr. Hinshaw—full mobilization?

Mr. HINSHAW. Yes.

General DISOSWAY. No, sir. The pool is not large enough now to meet full mobilization needs. They would have to be trained along with the production of aircraft.

Mr. HINSHAW. How do you expect to get them?

General DISOSWAY. We expect to train them, sir, at such times as we get the program.

Mr. HINSHAW. What kind of training course do you propose to give them?

General DISOSWAY. Depending upon the size of the build-up, Mr. Hinshaw, if we did not have enough capacity within our own schools we would use whatever schools we could put people in, exactly as we did in World War II, and as we did at the beginning of the Korean war when we were faced with a very rapid build-up.

Mr. HINSHAW. Of course, that is a very nice generalized statement.

This reserve program for Air Force and Navy technicians and mechanics, is that expected to be one of these 1-day a week things?

General DISOSWAY. The proposed reserve program?

Mr. HINSHAW. The training; yes.

General DISOSWAY. Yes, it is planned on 48 drill periods a year, I believe.

Mr. HINSHAW. Do you think that you are going to train a mechanic or a technician in 1 day a week for 48 weeks?

General DISOSWAY. It is mostly planned, sir, to be for a keeping of the skills that they have already acquired.

Mr. HINSHAW. When?

General DISOSWAY. During their service within the Air Force.

Mr. HINSHAW. What about their training in advance of service? You have to have them in the Air Force, you know.

General DISOSWAY. That is right, and we will train them in the Air Force, and then they will revert to the reserve forces where they will keep their skills with these drill periods.

Mr. HINSHAW. You are going to have a very large training program, I take it?

General DISOSWAY. The reserve program, as it is now planned, sir, reaches rather large proportions.

Mr. HINSHAW. I would think that you would have very few people on active duty if you started a program that was adequate for the training of the Reserves. When I say "On active duty," I am talking about the military service other than training. Do you have an adequate staff of instructors for that sort of thing?

General DISOSWAY. Mr. Hinshaw, that is a rather difficult question to answer unless you know specifically how fast you are going to build up, or what the Air Force cut of the total manpower within the United States is going to be at the time. We have been through really, since Korea, a partial mobilization. It is a little difficult for me to answer a general question like that specifically.

Mr. HINSHAW. I think that we ought to sit down and do some talking across the table. It is not quite adequate to do the talking here. This idea of taking 18- or 19-year-old boys in and training them to be mechanics in 2 or 3 years and putting them in the Reserve and having one drill a week on such things as engine overhaul or engine repair and that sort of thing down the line sounds silly to me, if you do not mind my saying so.

General DISOSWAY. Other people have different opinions, Mr. Hinshaw.

Mr. HINSHAW. They may have, but I want to talk to them across the table. Actually, if you do not have trained personnel in advance of mobilization requirements it will be a sad day. Is that not so?

General DISOSWAY. Well, that again, Mr. Hinshaw, has to be a balanced build-up. In other words, it takes so long to get an aircraft out, which gives you a certain leeway or lead time in training people to meet the aircraft, and all mobilization plans are, of course, upon that basis. You run through all the various requirements and then determine which one has to be boosted up, or cut back, to meet the others.

Mr. HINSHAW. Well, General, I think under the circumstances we are going to have to do a little sitting down and talking about it because this committee and this Congress had a very interesting and difficult time with that subject beginning in 1939 and 1940. We found that as time went on and the program built up civilian training, the Air Force and the Navy both wanted to take it over, but they had no interest in it, just as you have expressed no interest in it now, in advance, but it is a good thing we did it in advance or you fellows would have been out on a limb about 40 miles.

Mr. BECKWORTH. General, do you feel that the civil pilots training program helped the Air Corps in the last war? I know you said you did not know much about it, but you have some feeling about it.

General DISOSWAY. I cannot answer that question because I was not mixed up in training during the war, sir. I have heard various reports, some good and some bad. I would rather get someone over here.

Mr. BECKWORTH. You do not have any general feeling about what good it did? You almost doubt, you would say, that it did any good?

General DISOSWAY. I would not say that. I would say that it did some good. Whether it ever trained anyone or not, at least it made the American people more air conscious, sir.

Mr. BECKWORTH. That is quite a concession, it seems to me, for the general to make. That in itself was a good thing, was it not?

General DISOSWAY. Yes.

Mr. BECKWORTH. Do you think one might make them more air conscious now?

General DISOSWAY. I think that we are going to have to do something to make them more air conscious, Mr. Chairman.

Mr. BECKWORTH. Do you think you might possibly need such a program if you do not get that reserve bill through you have over in the Armed Services Committee?

General DISOSWAY. The ROTC bill?

Mr. BECKWORTH. Yes. Assume that you do not get it.

General DISOSWAY. That would make me very unhappy, Mr. Chairman, if we did not get that. Yes; we are going to need something.

Mr. BECKWORTH. You are going to need something if you do not get that bill?

General DISOSWAY. Yes.

Mr. BECKWORTH. Would you have any idea of the difference in cost of that bill and this one?

General DISOSWAY. I do not believe that you can compare the two.

Mr. BECKWORTH. You can always compare costs, General.

General DISOSWAY. That is true, but you cannot compare the purposes of the two bills.

Mr. BECKWORTH. But you can compare the cost.

General DISOSWAY. I have seen various costs on this. I do not know exactly what they are.

Mr. BECKWORTH. Would you undertake to give to the committee what you understand to be the costs for whatever groups you have in mind in the other bill?

General DISOSWAY. The other bill?

Mr. BECKWORTH. Yes, the one in the Armed Services Committee. I would like the record to show that.

General DISOSWAY. For the three Departments I believe it would run something over $100,000,000 a year, sir.

Mr. BECKWORTH. What are the three Departments?

General DISOSWAY. The Army, the Navy, and the Air Force, but that is strictly a bill to train officers for the three Departments.

Mr. BECKWORTH. Do you feel that it is a good thing to have a crop, we might call it, of new pilots coming off every year for the next few years?

General DISOSWAY. Well, we have to have a turn-over within our pilots. You have to rotate them so that you keep the young blood within your combat elements all the time, and then those that are rotated out go to the National Guard or the Reserve, and they serve a period of usefulness there when they can be called back and used in case of an emergency, but we plan a rotation of pilots through the Air Force.

Mr. BECKWORTH. How many new pilots annually do you feel is the minimum that you must have?

General DISOSWAY. I do not believe that I can answer that question here, Mr. Chairman.

Mr. BECKWORTH. Would you try to get us a little information on it?

General DISOSWAY. I know the answer, but I do not believe that I can give that to you in open forum.

Mr. BECKWORTH. I would not want you to do it if you think you should not, of course.

Mr. HINSHAW. Do you know how many persons in the aviation category are being trained annually in Russia?

General DISOSWAY. Sir, I cannot answer that question.

Mr. HINSHAW. Would you like to answer it some time?

General DISOSWAY. If you would like to have an executive hearing on that subject matter, we can talk about it, but I cannot talk about that in an open forum either. I have the information here.

Mr. MACK. You say that you do not think this type of program would create interest in the Air Force?

General DISOSWAY. I do not believe that I ever said that. I think that I said just the opposite.

Mr. MACK. You said that it would?

General DISOSWAY. Yes.

Mr. BECKWORTH. Just what did you say?

General DISOSWAY. I said that it would create an interest in air.

Mr. MACK. I am not too familiar with your reserve program, or your ROTC program, as you speak of it, but this type of training would be considerably cheaper than the military training program at the present time as far as the flight training for the individual is concerned, is that not true?

General DISOSWAY. You cannot compare the two, sir.

Mr. MACK. You mean that there is too much differential to compare the two?

General DISOSWAY. There is too much difference in the purpose for which you are training them.

Mr. MACK. And too much difference in price?

General DISOSWAY. You cannot expect to train somebody in a jet airplane at the same price that you can in a Cub.

Mr. MACK. That is my point.

General DISOSWAY. I do not think that is a fair comparison, to say that the cost of this is cheaper than the cost of training somebody to be a military pilot. They are two entirely different things.

Mr. MACK. You do agree that aerodynamically all planes are similar?

General DISOSWAY. They all have a stick and rudder, yes; but there is a great deal of difference between a Cub and a Sabre jet, and it takes a lot more training to get someone where he can use an airplane of that type as a weapon as opposed to flying from point A to point B in a lighter aircraft.

Mr. MACK. I presume also there is a lot of difference between a Sabre jet and your P–80.

General DISOSWAY. Not a great deal.

We use the P–80 as a preliminary plane before putting them in a Sabre jet.

Mr. MACK. That does operate in similar fashion. In other words, they are similar, but you would not say that the SNJ, as we call them——

General DISOSWAY. The T–6.

Mr. MACK. The primary trainers are similar to the Cubs.

General DISOSWAY. It is a matter of teaching someone to walk before you can teach them to run. They have to go through various types of aircraft before they can fly the most complicated ones.

Mr. MACK. We have a good point here.

General DISOSWAY. Sir, I am afraid that I fail to see your point.

Mr. PRIEST. Is not the primary purpose of the program proposed in this legislation, in these two identical bills, to teach them to walk? As I understood, the general said that you have to first teach them to

walk. That is the first step, and it seems to me that is the primary purpose of the legislation that we are considering here.

General DISOSWAY. I understood that the primary purpose of the legislation was to train pilots for the airlines, which I understand are becoming short of pilots and not for the military.

Mr. MACK. I did not understand that was the primary purpose of the legislation, Mr. Chairman.

Mr. BECKWORTH. The prime purpose of the legislation, so far as I am concerned, is to be sure that we have enough people who can fly airplanes for all purposes, at least the fundamental training to provide that reserve that would be needed as we get into more and more difficulty. It would be for almost exactly the same purpose as we had before, and that is why I am sorry that the Air Force did not send someone down here who is familiar with the old program. We have to know something about the past of this program to see into the future. I never felt, personally, just because a person is trained to fly in a given airplane that that means that he could not fly almost any kind, if given additional training.

General DISOSWAY. That is correct, sir.

Mr. BECKWORTH. I do not see how you can divide your purposes finally and ultimately. Naturally, you do not use pilots in Saber jets until you need them. They do not engage in war unless there is a war. That does not mean that you do not have to have somebody ready. They first have to walk, as the gentleman from Tennessee so well pointed out. A good many of them learn to walk in the civil pilots training program that we had before, and then later on flew all kinds of planes. Is that not right, in your judgment?

General DISOSWAY. Yes. I understand that is the case.

Mr. BECKWORTH. You understand that to be the case?

General DISOSWAY. Yes.

Mr. BECKWORTH. That is about what we have in mind here—they are to be used for whatever final need might be developed. I wish that you would discuss it on that basis, because, personally, I think that you have come here under a misconception. At least discuss it on that basis.

General DISOSWAY. If the bill proposes, Mr. Chairman, to train a large number of people without any obligation on their part to get into the military service, or if they do not meet the physical qualifications and become flying officers, then I do misunderstand the legislation. I thought the legislation was strictly——

Mr. BECKWORTH. You are at a great loss, apparently, when you say that you know nothing about the old program. I am certainly sorry about that.

General DISOSWAY. No; I am talking about the bill. As I understand the bill, it is to provide pilots and mechanics to keep the civil air industry alive.

Mr. BECKWORTH. There are several bills before this committee on this subject matter. You apparently did not understand me at the beginning when I stated that we are studying the subject matter. Naturally, it comes in the form of a bill.

Mr. Layton, will you get one of the bills that I introduced that is not mentioned here because the general is tied too much to the bill rather than the subject matter? Civil pilot training is what we are

talking about, and we would like to discuss it, as far as you are concerned, in its over-all significance rather than just with reference to sentences found within one or two bills.

Mr. PRIEST. I want the gentleman to yield to make this observation because our colleague from Illinois, Mr. Mack, is a very modest gentleman, and he would not make this statement on his own. I happen to know that our colleague received his original training in the civilian pilot training program. I know also that he recently flew some 33,000 miles around the world in a single-engine plane, quite a remarkable feat of navigation and piloting. I happen to know also that not so very long ago he took a jet off the ground and landed it safely without any crack-up.

I say that because he would not say it, and his original training came in the original pilot training program that came out of this committee during World War II.

Mr. BECKWORTH. And he served in the Navy also, I might say.

Mr. PRIEST. I want to make that part of the record clear, because I know that the gentleman would not refer to his own experience, but we consider him quite an accomplished aviator, and we are very proud of that fact and that he is on the committee. That is all for the moment that I have to say.

Mr. MACK. I have a correction. It was not a Sabre jet; but it was a jet airplane.

Mr. PRIEST. I am sorry. I knew that it was a jet. We will make that correction; it was not a Sabre jet.

General DISOSWAY. The Air Force has never claimed that it always had all the good pilots. We realize that there are good ones in the other services, too.

Mr. BECKWORTH. What I would like to make clear to you is this: Speaking individually, at least what I have in mind as we discuss this is the question of preparing or teaching people to fly with no restrictions on what flying they might finally do in the interest of the Nation's welfare. That would mean this—you might teach 10 people to fly and if they knew how to fly and if you finally needed them for various purposes, and particularly if they were willing to serve those purposes, they would be available. That is about what the old program was.

General DISOSWAY. You will not get support from the Department of Defense for a program that teaches everybody to fly, sir.

Mr. BECKWORTH. We do not say everybody. The other one did not teach everybody to fly, did it?

Mr. MACK. Do you not feel that by creating more interest among all the people in the country you will have a larger number of young men knocking at your door to get into the Air Force?

General DISOSWAY. We certainly agree to that, sir.

Mr. MACK. I think that was true of the original program. I have had a limited amount of experience with it. At a later date I was an instructor in the Navy, and we had the boys coming in from the civilian pilots training program, and I must admit they were not accepted fully in the military service. I know in the Navy, and I presume it was the same in the Army Air Corps at that time, the military pilots did not feel that they actually knew how to fly because they had not received their training on the military forces. I think that is more or less the feeling that still exists today.

General DISOSWAY. I would like to take exception to that statement, sir. We feel just to the contrary because our primary flying is now given by civilians, as you well know, so we do think the civilians can teach our boys to fly, but again I must come back to the point they teach only those to fly who meet our qualifications and who are committing themselves to a tour with the Air Force, so it is of direct benefit to us.

Mr. MACK. General Disosway, am I not correct in saying that you also had contract schools as early as 1942?

General DISOSWAY. That is right, sir.

Mr. MACK. And the latter part of 1941, you had the identical program to train your primary students at that time as you have today.

General DISOSWAY. That is correct, sir.

Mr. MACK. I do not think that is what I had reference to at all. The ones I had reference to were the ones who were outside the program, who had some flight training coming in. The first thing that you were instructed to tell them, they knew nothing about flying at all; that they would have to do it the Army way or the Navy way, as the case might be.

General DISOSWAY. Some people may have said that.

Mr. MACK. I know that it was true in the Navy. It may have been different in the Army.

General DISOSWAY. You can speak for the Navy. I do not believe that was true in the Air Force.

Mr. HINSHAW. I think that it should be stated for the record here that something on the order of 100,000—it may have been 90,000—youths were given an opportunity to take primary training under the civilian pilot training program and a very high percentage of those qualified for cadet training became military pilots during World War II. I might state from my own experience in the matter that if it had not been for the civilian pilot training course prior to World War II the Air Force and the Navy air arm would have been delayed as much as a year in the production of pilots. As it was, that number of candidates was ready for them. They were already weeded out as to their ability to fly and were ready for acceptance into the Armed Forces. Of course, you can go ahead with this ROTC program and give them their 1 or 2 hours a week for the rest of the year, and whether or not the Air Force and the Navy feel that the last program was of some benefit to them, of course is a matter for their decision. We cannot make that decision. All we know is that they liked the program so well after it got going that they took it over. Is that not true?

General DISOSWAY. I will have to get somebody to answer those questions for you.

Mr. HINSHAW. This bill before us goes further than that. It proposes to train ground personnel. Of course, it is not stated in the bill what ultimate employment the ground personnel might have. Let us take, for instance, a youngster who is going to high school, who is not yet inducted into the service but who is liable to induction. If he were to receive a degree of technical training which might qualify him for some degree of a mechanic's license, or as an electronic technician or whatever it may be, do you mean to say that he would be of no value to the Air Force at the time that he was inducted into the service?

General DISOSWAY. No; I do not think that I ever said that.

Mr. HINSHAW. What would you think?

General DISOSWAY. Of course, he would be of value if we got him.

Mr. HINSHAW. Would it be of value to the Air Force if he went to work for an aircraft manufacturer?

General DISOSWAY. Yes. I understand that is the purpose of the bill.

Mr. HINSHAW. Would it be of value to the Air Force if he went into employment at the Tinker Air Force Base in Oklahoma City?

General DISOSWAY. As a civilian employee?

Mr. HINSHAW. Yes.

General DISOSWAY. Yes.

Mr. HINSHAW. So, regardless of what his ultimate employment might be, the fact that we would have a considerable number of trainees coming up from various training establishments, regardless of their employment they would still be of value to the Air Force; would they not?

General DISOSWAY. Provided they were working in the aircraft industry; yes.

Mr. HINSHAW. That is the object of this, is it not—to train them for work in the aircraft industry some place, whether they are in the military service or elsewhere, although we do not propose here that we train military personnel as such?

General DISOSWAY. That is right, sir.

Mr. HINSHAW. In other words, what you would like to have, I assume, would be a large group, or a large pool of personnel trained to the best of the ability of those who are doing the training, within the time limits established for that training, regardless of their employment, whether it be in the Air Force or in private industry.

General DISOSWAY. As far as the strictly military angle of it goes, Mr. Hinshaw, the Reserve program is theoretically supposed to do that for the military personnel.

Mr. HINSHAW. Yes, General, and that is why I so heartily disagree with you, because the Reserve program comes after service in the Armed Forces and not before. What this bill proposes is to train them before they go into the service.

General DISOSWAY. I did not understand that as the meaning of the bill, sir.

Mr. HINSHAW. We are not training military personnel; we are training civilians.

General DISOSWAY. I understood that it was not for the military but for the civilian industry.

Mr. HINSHAW. But that is where there is a mental block. If I am a civilian boy 18 years old and am an airplane mechanic and I am called into the service, would that be of value to you?

General DISOSWAY. If you came into the service with training, quite obviously you would be of value.

Mr. HINSHAW. It is civilian training, and he is not in the Air Force. If he comes to the Air Force already trained, is that of some benefit to the Air Force?

General DISOSWAY. Certainly, sir.

Mr. HINSHAW. That is what this bill proposes to do.

Mr. BECKWORTH. General, you would not feel that it would be the sentiment of the committee here to say in effect that when one of

these boys is trained as a civilian, under no circumstances could he be used in the Air Force? You do not feel that way about this legislation; do you?

General DISOSWAY. If I get that, sir, that I do not think——

Mr. BECKWORTH. I am sure that you do not feel that way; do you?

General DISOSWAY. No. I say that the Department of Defense cannot back a bill that trains people that are not going to be of direct benefit to them. That is up to you gentlemen and the Congress, to decide whether you do that or not.

Mr. BECKWORTH. To get this matter clear, as the gentleman from California has so ably tried to do, when the person receives training conceivably he could be available and would even be compelled finally by induction or otherwise to use that training and knowledge in the interest of national defense in the Air Force. You concede that to be a very definite possibility; do you not?

General DISOSWAY. Yes.

Mr. BECKWORTH. So in effect, when you indicate that you would not benefit by it, or you could not guarantee that you would benefit by it, you are missing the point, because the chance is that if you needed the fellow you would benefit as I have just indicated. The Air Force would definitely benefit by that training.

General DISOSWAY. Yes.

Mr. BECKWORTH. It is along that line that the committee is seeking to write legislation. It is just a general aspect rather than one particular bill or bills.

Mr. CARLYLE. Is it your position that there is a shortage of pilots for the Air Force or civilian purposes at this time?

General DISOSWAY. I understand from all the data that I have seen that there is soon to be a shortage of pilots in the civilian industry. Within the Air Force we do not contemplate any shortage of pilots, because we are training a sufficient number to meet our program.

Mr. CARLYLE. Is there any shortage as to technicians in the civilian industry, or the military?

General DISOSWAY. I understand there will be a shortage in the civilian part of the industry. Within the Armed Forces, with the Air Force, we do not have any shortage, nor do we plan to have a shortage.

Mr. CARLYLE. Of course you agree with us that a trained technician is to be used on the ground and the trained pilot, of course, is available for use either in the civilian or the military; is that correct?

General DISOSWAY. Not entirely, sir.

Mr. CARLYLE. With additional training?

General DISOSWAY. There are other things that enter into it. He may want to fly in civilian life and he may not want to fly in the Air Force. He would have to volunteer to do that. He may not meet the qualifications. There are those things that enter into it, physically, and so forth.

Mr. CARLYLE. You would not hesitate to have the thought that a trained civilian pilot is a potential pilot for the Air Force, would you?

General DISOSWAY. I would concur in that 100 percent, sir, if he desired to come into the Air Force, and if he met the physical qualifications.

Mr. CARLYLE. He would be a trained man.

General DISOSWAY. He would be a partially trained man.

Mr. CARLYLE. With additional training he would be a trained man.

General DISOSWAY. Yes.

Mr. CARLYLE. Now, do you question the fact that it is advisable to furnish training for additional civilian pilots, based upon what we have just discussed?

General DISOSWAY. No, sir.

Mr. CARLYLE. You do not question that; do you?

General DISOSWAY. No, sir.

Mr. CARLYLE. You feel there is a need for additional trained pilots, civilians, and for technical purposes on the ground?

General DISOSWAY. Sir, I am not an expert in the field, but from what I hear from the CAA and what not there is a need, yes.

Mr. HALE. There is a need for what?

General DISOSWAY. Technicians and pilots within the civil air industry, sir.

Mr. HINSHAW. If there is no shortage of trained personnel in the Air Force and the naval air arm, why are they searching to find people who have had a little experience in it, and driving them into the reserve, and why do they insist on calling back old pilots who have had World War II experience, who have not had any experience particularly since, and making them fly?

General DISOSWAY. We have not called anyone back from the Reserve involuntarily for some time now. We did call them back immediately after Korea to meet the requirements of a very rapid build-up, but that is not being done now, and they will soon start being phased out and being replaced by the new ones that we are now training.

Mr. HINSHAW. I would like to know where all these letters come from, from people who are in the service today who do not want to fly.

General DISOSWAY. I believe that is a rather small percentage, sir, when you consider the over-all, and none of those have been called back recently. That program was stopped some 3 or 4 months ago.

Mr. HINSHAW. Three or four months ago. That is about it. Actually, however, the average age of your qualified Reserve pilot today is pretty high; is it not?

General DISOSWAY. In the low thirties, sir.

Mr. HINSHAW. That is what I thought. You would not take them in in the last war if they were over 26.

General DISOSWAY. We did not have a Reserve when the last war started so there was not anyone to bring in.

Mr. HINSHAW. I am talking about taking them in as trainees.

General DISOSWAY. In the beginning that is correct. Our age is still 26½.

Mr. HINSHAW. I woud just like to say this, General, that I have had the privilege of sitting in on the Congressional Air Policy Board some time ago and listening to some very high rank in the Air Force and the Navy discuss the subject of Reserves and qualified personnel, and so forth, and they seemed to think that it was very highly desirable that the civil life contain as many persons as possible who were qualified in aviation regardless of what qualifications they had. It might be all the way from a weather observer to a forecaster; it might be all the way from a small enlisted mechanic to some person who was qualified to handle the maintenance of aircraft in the field, and

it was their feeling that the larger the group in civil life that was available with training the easier it would be for the Armed Forces in the event of full mobilization, and that consequently the Armed Forces were interested in any program which would provide for as much training as possible to civilian personnel with the idea that civilian personnel might some day end up in the Armed Forces and that their training prior to going into the Armed Forces was of extreme value and far greater to the Armed Forces than for them to come to the Armed Forces without any training. I cannot understand the viewpoint expressed in this statement that you have made, that you are interested only in the military personnel. You admitted to me awhile ago that persons who were available for the aircraft industry were of great interest to the Air Force because that is where you get your aircraft. You admitted that personnel trained in airports and various operations around an airport should be of value to the military in the event the military needed them, or in the event the military might need their services as civilians on the ground in case they stopped at a nonmilitary airport, or in the event they were employed as civilian personnel on a military airport.

I would think the Defense Establishment would take the position that the more people, the more young personnel, who received training in the various branches of the aeronautics field there were, the better off the Armed Forces would be in the long run, instead of simply standing off and saying, "We are interested in them only if they are going to put on a uniform." That is not true, and whether the Military Establishment is willing to say it or not, I will say it for them because I have heard them say it to me privately. I do not want to ask you to reply to that because I know that you have been limited to the statement that you have made, but I am going to say that on my own. I know it is to be true. Either that is so, or some of the best brass in the country did not know what they are talking about.

Mr. HALE. Is there any place where the Air Force can get Air Force personnel except from civilians?

General DISOSWAY. No.

Mr. HALE. I am at a loss to understand the extreme caution of this statement that you have given us. It seems almost too clear for argument to me that all of the training you can get would be beneficial to the country and to the defense of the country—and I am speaking of training for the civilians.

General DISOSWAY. That is correct, sir, and that is a decision that you gentlemen have to make. I will repeat my point again. Apparently I do not make it very well, that as far as the Department of Defense is concerned it does not feel it is in a position to support a bill from which it will not receive direct benefit. That, in effect, is what the statement says. As to the fact that there would be more people in the country that would know about aviation——

Mr. HALE. Is not the Department of Defense interested in indirect benefits that they might possibly receive?

General DISOSWAY. Yes, they are interested, but I do not believe that they can support——

Mr. HALE. If you will excuse me from saying this, it seems to me that the Department of Defense is not showing much imagination or vision.

Mr. HESELTON. I was unable to hear the first part of your statement, but I would be interested in having you tell us what the difference is in the training of aircraft engine mechanics, aviation instrument and electronic technician, under the Air Force program and under the civilian program, and how the product differs in terms of ability to perform duties in that field.

General DISOSWAY. Sir, the basic phases of all their training is the same. The difference applies to the specific requirements for which they are trained. In the civilian industry, in the airline operation, or in private flying operations, they do not get into the complicated equipments that are necessary in the weapon system in our aircraft, and so forth, but the basic training in aircraft and engine mechanics, or electronics people, or instrument people, is the same.

Mr. HESELTON. In other words, if a young man is trained under the program planned in these bills to service DC–6's, Constellations, transport planes, and you have the same type of craft in the Air Force, he could immediately take up an assignment with the Air Force if it became necessary in that field. You might have to train them further in terms of combat aircraft.

General DISOSWAY. That is correct, sir.

Mr. HESELTON. From what little I have heard I share the bewilderment expressed by my colleague as to why the Air Force does not see any benefit in that.

General DISOSWAY. We do see benefits in that, sir.

Mr. O'HARA. General Disosway, I assume that the Air Force does take the viewpoint that in the training of pilots they prefer to completely train the pilot rather than have him civilianly trained; is that the situation?

General DISOSWAY. No.

Mr. O'HARA. Why do you oppose that phase of this bill?

General DISOSWAY. We have before the Armed Services Committee now, as I explained before, a bill, a ROTC bill, that is to give flight training to the number of pilots that we are going to need within the Air Force. We could not very well, from a defense viewpoint, support training people that we would not get the immediate benefit from. There is a long range in supporting the ROTC bill, and we plan to get our input from that bill.

Mr. HINSHAW. The plan is to transfer to the Military Establishment a certain number of aircraft that are owned and operated by the airlines and other private operators in the event of full mobilization, is it not?

General DISOSWAY. I have Colonel Bridges here to discuss the mobilization aspect.

Mr. HINSHAW. You recognize it as being a definite fact?

General DISOSWAY. I think that Colonel Bridges can answer your question on that. He is in the mobilization planning of the civil air part.

Mr. HINSHAW. Let us assume that it is correct, then, without drawing him into it.

General DISOSWAY. He is right here.

Mr. HINSHAW. I am merely stating to you the fact that I have data in my office to support it. At the same time, the Defense Establishment is interested in having civil air transport service that

remains in private hands continue in operation, I assume; is that not so?

General DISOSWAY. Yes.

Mr. HINSHAW. It is also understood that a very large portion of the civil personnel in aviation is likewise in the Reserves and can be called to active duty as Reserves, thus leaving vacancies in the civilian aviation establishments, is that not so?

General DISOSWAY. I believe that is correct.

Mr. HINSHAW. Is it of any interest to the Air Force that these vacancies might be filled by persons who have been trained for such jobs, or would you want to leave them vacant?

General DISOSWAY. The answer is quite obvious, you would want them filled.

Mr. HINSHAW. Then I do not understand the lack of interest of the Air Force in this program. It comes right back to the point that you made, the only interest the Defense Establishment has in any program is only when you are going to put someone in a uniform. Actually, they are depending upon the entire civil facilities for complete operation; are they not?

I just want to say that I think the Defense Establishment ought to take another look and come up here with a different idea, based upon a different premise, that there are other functions that have to operate as well as the uniformed services in the event of full mobilization certainly, and every possible step should be taken to make provision that these positions of importance will be filled. I hope that they will amend their views accordingly and come up with a broader viewpoint at a later time.

Mr. O'HARA. General Disosway, under the present program of the armed services, are you getting your complement of trainees from the service itself, or are you enlisting for that purpose, or what is the program?

General DISOSWAY. We get them from both. We get them from the airman category within the Air Force, and from the civilian populace also.

Mr. O'HARA. Those are all trained by military pilots. They are not trained by civilian teachers; or are they?

General DISOSWAY. The first part of their training is given by civilian teachers. They operate primarily our schools.

Mr. O'HARA. If it is not a military secret—and if it is I do not want you to answer—to what extent is the Air Force training? What is the number of trainees that you have in the Air Force at the present time in pilot training?

General DISOSWAY. That is a classified bit of information.

Mr. O'HARA. The only reason I asked is because I had the impression that it was not being very extensive or sufficient. Perhaps I am wrong. Am I wrong?

General DISOSWAY. I believe that you are, sir.

Mr. O'HARA. I am glad to be advised that I am wrong.

General DISOSWAY. It is the pilot training program that is needed to meet the airplanes that we are getting, sir.

Mr. DOLLIVER. It is sufficient?

General DISOSWAY. Yes.

Mr. MACK. Is all your primary training done by contract schools?

General DISOSWAY. We have one military school and nine civilian schools.

Mr. MACK. I thought that you were having the contract schools do some of the training because you were using your qualified pilots for operational units. Is that a question of economy, or what is the purpose?

General DISOSWAY. We did it for two reasons mainly—the civilian program in the last war was a very successful program. When we were again faced with a rapid build-up in this war we thought that we could put these schools into operation faster and it would save military manpower in the people who support the aircraft at those schools, and there were available sufficient people throughout the country to know how to run them, and a cost study indicated that it would be cheaper, so we went to the civilian pilot schools.

Mr. MACK. So that there were several contributing factors.

General DISOSWAY. Yes.

Mr. MACK. It was a little cheaper, and you had the civilian pilots trained and available.

General DISOSWAY. No, sir, we had to train the civilian pilots. We ran them through a pilot instructor's school at one of our bases and then gave them to the contractor.

Mr. MACK. I presume that some of them had been through their pilot training course in the last war also.

General DISOSWAY. They were in a great majority World War II pilots, and it was just a matter of sending them to a refresher course and keeping them posted on instructor techniques and giving them the contract.

Mr. MACK. They did have a background. You did not have to give them all their training.

General DISOSWAY. That is right. They were practically all World War II pilots, military pilots.

Mr. MACK. Some of the pilots had already been qualified, though, prior to World War II.

General DISOSWAY. Some of them had never been in the military, certainly.

Mr. BECKWORTH. Assume that we had had a civil pilot training program 2 years before the trouble developed in Korea, do you think the Air Force potentially would have been any better off?

General DISOSWAY. I can answer that question, and I can answer it fully and completely, but in order to answer that question, I would have to get into data that should not be given in open forum. It was not the pilot himself, the individual, who was the deterrent to getting up faster.

Mr. BECKWORTH. I do not believe that you have quite answered my question.

General DISOSWAY. I mean that if we had had a hundred thousand of them it would not have made any difference.

Mr. BECKWORTH. I would like to get an answer to that question, specifically, as best you can give it. The question is very simple. Assume that we had had a civil pilot training program 3 years before the Korean trouble started, do you think the Air Force potentially would have been any better off?

General DISOSWAY. The answer, sir, is that it was not the pool of pilots that was the limitation to turning out people to fight in combat airplanes.

Mr. BECKWORTH. Would your answer be "No"?

General DISOSWAY. I would answer you "no" as to meeting combat commitments.

Mr. BECKWORTH. General your answer would be "no"?

General DISOSWAY. That is right.

Mr. HALE. Was the civil air patrol useful in World War II?

General DISOSWAY. Yes.

Mr. HALE. Do you have any hesitation in saying "yes"?

General DISOSWAY. No, sir, none whatsoever.

Mr. HALE. And a similar activity would be useful in a similar emergency in the future, would it not?

General DISOSWAY. We still have the civil air patrol.

Mr. HALE. And it is desirable to maintain it, is it not?

General DISOSWAY. Yes.

Mr. BECKWORTH. Thank you very much, General Disosway.

You will get us a man who knows something about the program.

General DISOSWAY. The civilian pilot training program; yes.

Mr. BECKWORTH. The next witness is Mr. Joseph T. Geuting, Jr., manager of the Aircraft Industries Association of America, Inc.

STATEMENT OF JOSEPH T. GEUTING, JR., AIRCRAFT INDUSTRIES ASSOCIATION, INC.

Mr. GEUTING. Mr. Beckworth and Mr. Hinshaw, I have a prepared statement.

My name is Joseph T. Geuting, Jr. I appear before this committee today as a spokesman for the Aircraft Industries Association of America, Inc., which as I believe you are aware, is the trade association of the aircraft manufacturing industry.

We favor the enactment of H. R. 7073 and H. R. 7074. Although the aircraft manufacturing industry does not itself engage in the kinds of training to be aided by this legislation, yet because the indirect benefit to our industry and to aviation generally is so important, we desired to express our interest in and support of this legislation.

Studies undertaken by our Association indicate one of the most serious problems looming on the horizon is a shortage of skilled technicians. This is true not only for aircraft manufacturing, but also for the many commercial and military activities where an intensification of the state of emergency, with its coincidental increases in demands for aircraft production and all kinds of aircraft maintenance skills, would make these shortages even more acute. The aircraft manufacturing industry in the past had to resort to, and is now conducting, on-the-job-training courses. However, this is no substitute for being able to retain personnel who have already been schooled in these basic skills. CAA studies suggest that high schools provide the industry with few such technicians. Colleges are, of course, a source for engineers, but few colleges produce the kinds of technicians needed in increasingly large numbers in the aircraft industry.

In an editorial written for the November 1951 issue of Planes, publication of the Aircraft Industries Association, Admiral Ramsey, AIA president, said:

> There is little public knowledge or interest in aircraft manpower problems as yet, largely because no frantic calls have gone out for armies of employees. The real problem is in engineers and skilled technicians.

The shortage of engineers is the most serious problem. Where 50,000 men were graduated from these (aeronautical) courses in 1949 and again in 1950, only 38,000 were graduated in 1951, and it is estimated that there will be only 26,000 in 1952, 20,000 in 1953, and 17,000 in 1954.

Aggravating this situation is the fact that of the 38,000 1951 engineering graduates, 30 percent were immediately committed to the Armed Services, and all aircraft companies have suffered losses because many engineers who were enlisted in the organized reserve were called for duty.

Modern military aircraft are many times more complex than those of the last war. They have electronics systems that are far more complicated and weigh up to five times as much as planes of 6 years ago. As a result, the engineering requirements of today's advanced military craft are far, far greater. For example, where in 1943 only 1 out of every 22 aircraft employees was an engineering employee, the ratio today is 1 to 8.

Also becoming more and more serious is the shortage of skilled mechanics and technical workers. Training of additional personnel for these tasks may take a year or two, where training for ordinary factory jobs is comparatively short. By way of example, in World War II radar and electronics mechanics numbered only about one out of a thousand employees; today they number one out of 24.

A great deal of the emphasis in today's mobilization program is on broadening the base so that there will be the ability for rapid expansion, should it be needed. Although quantities of aircraft are on order for our Air Forces, this does not alter the basic fact that the emphasis is on broadening the production base so that rapid expansion can and will be possible. If factories which produce aircraft and aircraft components are being tooled and equipped to be able to meet the demands of such a mobilization plan then it should be of comparable importance to preserve as a national asset the potential training capacity, facilities and skill of the Nation's aviation schools.

The afore-mentioned facts are indicative of the fairly direct relationship of this legislation to the aircraft manufacturing industry. However, manufacturing is the base upon which our industry is built and where it starts. The health and prosperity of all segments of aviation therefore assume importance to and have bearing on the health of the aircraft manufacturing industry. We are informed that the air transportation industry, in its testimony, will relate its problems in recruiting adequate quantities of technicians. Similarly, the base operation industry across the country is having difficulty in obtaining mechanics and other maintenance skills essential to the conduct of an adequate base operation.

Commercial aviation, in its transportation sense, is making enormous strides. Additionally, it provides a mobilization reserve of major importance to mobilization planning. For example, (and as Mr. Hinshaw has already mentioned during the testimony of the previous witness) the air transportation industry, the Department of Defense, and the Defense Air Transportation Administration recently announced a plan which would turn over a substantial number of large transport aircraft for military airlift. The same emergency requiring the implementation of this plan would also intensify the need for all kinds of technical skills. There would be corresponding rapid expansion of military and production recruitment. In addition to military airlift requirements, the civil demands for transportation would also become intensified, as industries went into high gear to carry out their mobilization assignments.

Similarly, the field of general aviation, sometimes called noncarrier aviation, would become of even greater importance. The small airplane has become an important utilitarian and essential tool of busi-

ness, industry and agriculture. The demand for such aircraft is in excess of the current ability of the industry to produce them. As more and more light aircraft are put to work in these fields, there will be increasing need for the services which maintain such aircraft.

The base operation industry, as will be asserted by its spokesmen, will be benefited by the programs which this legislation would provide. Such benefit becomes of value to the whole civil and military aircraft structure. It further strengthens one of the segments of aviation which recent experience, as well as studies made by the National Security Resources Board and the Defense Air Transportation Administration and the Civil Defense Administration, indicate will play a vital role under conditions brought about by serious emergency or war.

Meanwhile, the whole civil-aviation industry stands on the threshold of steady growth. As the industry increases in size and health, it strengthens its ability to perform its important mobilization assignment. As civil production increases, more plant capacity will be maintained. As civil aviation utilization increases more service facilities will be required. As more service facilities are maintained so also will be maintained an ever-increasing reserve potential and reservoir of those technical skills which a modern air war would require.

Mr. HINSHAW. In the event that the aircraft industry is called upon for an all-out production program similar to the program which was instituted in World War II, and at the same time we have to engage in a complete mobilization of the youth of our country, where would the aircraft industry turn for its traditional employees?

Mr. GEUTING. It would have to turn to the available employees, and it would be obvious they would be in demand by everyone who had need for technical skills. In this instance, we would find that the military services would be looking for them as enlisted or officer personnel. The airlines would be looking for them as technicians or pilots.

Our industry, in addition to its routine production workers, needs many technicians, to get airplanes up to the point of readiness on the flight lines. Everyone would be scrambling for the same pool of skilled workers and it would be used up very quickly. It would be obvious that the only place we could go would be to the youth and the schools that trained them.

Mr. HINSHAW. If memory serves me correctly, the air services found it so difficult to maintain full operation in Europe in the last few years of the last war that they set up what was known as service organizations which were taken directly out of aircraft factories.

Mr. GEUTING. Correct.

Mr. HINSHAW. I know in my own district the Lockheed Service Corp. service was established and a large number of employees were enlisted to serve in this organization directly in the Lockheed plant. They were sent to Europe in a civilian type of uniform, but nevertheless a uniform, in order to be able to keep those planes rolling over there for the Armed Forces.

Mr. GEUTING. That is correct, sir. The companies have service teams of that type even in the field today; not to the extent they did then, but it is necessary that they have service teams.

Mr. HINSHAW. I would assume in the event of full mobilization again a similar arrangement would be necessary in order to supply

the competent personnel necesary to maintain aircraft in the field of the highly complicated nature that airplanes are today.

Mr. GEUTING. You are entirely correct, sir.

Mr. HINSHAW. And by taking this personnel out of the aircraft factories, so to speak, and enlisting them in service organizations, large voids would again occur in the factories themselves, which would necessarily have to be replaced?

Mr. GEUTING. Yes. In fact, the industry, I think, has to a certain extent resisted in the past the suggestion of the armed services that reserve groups of service personnel be organized in a factory, feeling that when the "bell was rung" they would need them very badly at that time but they would be yanked right out, and that such would seriously interfere with their ability to expand.

A company when it expands has to depend upon two things: First, it has tools, equipment, and space, but in addition it has trained manpower. Where they might have three trained men on one job now, they might have to take and put those men on three different jobs and lower the level of skill, but at least spread it out so that they could expand more rapidly.

Mr. HINSHAW. I will not ask you to comment on this, but will comment on it myself. I do not see how in thunder the military forces expect to get anything out of a one-night-a-week training program of mechanics and other personnel, in a reserve program such as has been outlined by the previous witness here. Once a week for a ribbon clerk, or someone of that sort, to maintain his skill in electronics or something else seems to me to be out of this world. I do not understand it at all. Certainly, if we had trained personnel who were actually engaged, they would be available for those purposes and would be useful to the Armed Forces in the event of moblization. We also had another recommendation in the Air Policy Board report which had to do with the maintenance and overhaul of aircraft, engines, and parts in private establishments. It was suggested that some proportion of each of these establishments' personnel should be in the reserve so that they would then be currently familiar with the operations to be carried out, and in the event of mobilization could be called directly to service and be split off on the amoeba principle from these plants and put into the armed services where they could do some good instead of them merely taking someone who had had a 1-hour-a-week program. That seems to me to be ridiculous. I would like to state it to the Armed Services Committee when the ROTC bill comes up because I think I know something about it.

Mr. HESELTON. Has anything been done, to your knowledge, to determine the reason why young men and women are no taking this training contemplated in this bill?

Mr. GEUTING. I am not aware of that. Perhaps some of the representatives from the training establishments could answer that better than I. I will try to get some information for you if that is not satisfactory. I do not have first-hand knowledge of those studies.

Mr. HESELTON. I am just wondering if the Federal grant here of 75 percent of the training would be likely to reach people who are not now interested. I would assume that the type of employee would be fairly well paid. He would be a skilled employee.

Mr. GEUTING. Yes.

Mr. HESELTON. I wonder what the reason is for the lack of interest in taking that training.

Mr. GEUTING. I think that perhaps one of the problems is—and I am on somewhat shaky ground because I do not have first-hand information and I am sure that some of the other groups from the Aeronautical Training Society can answer it better than I—the draft calls on the younger people and it is hard to keep them in the courses. I think that has been one of the reasons why the private schools particularly, have had difficulty in maintaining a sufficient number of students to make it worth their while to carry on their training.

Mr. HESELTON. Will there be testimony as to the schools and the cost of training?

Mr. GEUTING. I am sure that there will be some testimony; if not competent witnesses will appear on that subject.

Mr. O'HARA. Do you have any estimate as to the personnel requirements of this country in the event of an all-out war? Let us keep it on the technical side, the mechanics. Especially in the light of your testimony of what has transpired in these jet operations and mechanical operations on planes, it seems that we have a serious problem facing us.

Mr. GEUTING. We do have studies as far as the aircraft manufacturing industry is concerned, which I think could answer that. I do not have the figures here at my fingertips, but again I would be glad to send you what studies we have.

Mr. O'HARA. I would like, if we could, to get the information.

Mr. GEUTING. It is information readily available, and I can get it for you quite quickly.

Mr. O'HARA. I think that it would be helpful to me, at least, to find out what our situation is. Also, I would like for you to comment on what the supply presently is.

Mr. GEUTING. We have such information and I shall be glad to get it for you.

Mr. DOLLIVER. I am just wondering if there is any kind of set-up in the aviation-manufacturing industry whom you represent, for the training of apprentices in the manufacturing field.

Mr. GEUTING. Of course, there is constant apprentice training in the plants, and such a program as this certainly would not interfere with the apprentice-training program. They would go on regularly. This would make it possible, however, to recruit additional personnel with skills. I would think at this stage of the game the benefits of this legislation would be directly more beneficial to those people who use and operate aircraft than it might be immediately to the aircraft-manufacturing industry, but that in turn is beneficial to us because we do not proselyte each others' forces.

Mr. DOLLIVER. For example, a young man or woman desiring to go into the aircraft industry could seek employment thereon a low-wage level and progress through steps to more skilled positions as experience and training within the plant would warrant.

Mr. GEUTING. That would be true.

Mr. DOLLIVER. Is that true now?

Mr. GEUTING. Oh, yes. As I say, most aircraft plants work on job classification systems where they can progress in grade as their level of skill increases, and in addition to that our airplane plants have on-

the-job training courses also. And they have apprentice courses in many cases, particularly when it comes to the machining skills.

Mr. DOLLIVER. Would that same observation be true in the establishments manufacturing electronic equipment and engines as well as air frames?

Mr. GEUTING. In that sense perhaps even to a greater degree, because there is a higher level of machining; a greater number of employees that would have to have that type of skill. I will say that perhaps these on-the-job apprentice training courses would be much more prevalent in an engine plant, or some of the jet engine plants, than might be the case in an airframe plant. But they are all interdependent.

Mr. HESELTON. I have read the bills hastily. I do not interpret them as providing on-the-job training within the industry. In other words, industry itself is not qualified as an agency to train these young men and women?

Mr. GEUTING. As I stated in my testimony, we have resorted in the past, and are still doing on-the-job training, but that would be no substitute for being able to retain people that come to you already with a level of skills so that you can start them in more skilled work.

Mr. HESELTON. What I meant was, representing the industry, you do not understand the bill provides a means by which on-the-job training will be given?

Mr. GEUTING. No. My understanding of the bill is that it has nothing to do with any of industry's efforts to train. It would be a supplement to it.

Mr. HINSHAW. I think the witness would agree also that the type of on-the-job training given in industry is for specific duties. For instance, to train someone to be a welder or a riveter.

Mr. GEUTING. That is correct.

Mr. HINSHAW. Or an assembly mechanic, not an all-around mechanic, or what is known as an aircraft and engine mechanic, or an instrument technician. It is the specific individual skill that the man is supposed to perform that is given to him in the on-the-job training in order to enable him to do his particular job and not to become a person who is qualified to maitain or repair aircraft.

Mr. GEUTING. That is correct, sir.

Mr. BECKWORTH. Thank you very much.

The next witness we have is Mr. Maxwell W. Balfour, of Tulsa, Okla.

STATEMENT OF MAXWELL W. BALFOUR, TULSA, OKLA., PRESIDENT OF AERONAUTICAL TRAINING SOCIETY

Mr. BALFOUR. My name is Maxwell W. Balfour. I am vice president of Spartan Aircraft Co. and the director of Spartan School of Aeronautics in Tulsa, Okla. I began my aviation career in 1916, and was in the Air Corps until 1931. I am an active certificated pilot. Since 1936 my life's work has been concerned with civil aviation training. I am testifying today in behalf of the Aeronautical Training Society of which I am president. Aeronautical Training Society is an association of civil aviation flight and technical schools. Our members now operate schools and bases in 38 States. I wish to

present to this committee a view of some of the principal sources of training of airmen to meet an M-day requirement and to discuss what it appears that the airmen's training bills, H. R. 7073 and H. R. 7074, will accomplish if enacted into law.

In order to improve the quality and safety of all flying, about 25 years ago the Government set up a licensing agency for airmen. Later the term was changed from "licensed" to "certificated" and when we speak of "certificated mechanics and pilots" we mean those who have met certain standards of knowledge, proficiency and physical fitness. These certificates are the proof of fitness to perform certain tasks in air transportation or other flying. Likewise aviation repair shops and schools are "certificated" for the particular tasks that they wish to perform. The able and impartial administration of this delicate task of certification by the Civil Aeronautics Administration is one of the finest things in the record of United States aviation.

People outside of the industry rarely understand the essential importance of the certificated aircraft and engine mechanic, commonly called the "A. and E." The pilot has received more attention because he does more spectacular things. But the pilot is the first to tell you that his aircraft is only as good as its maintenance. Only those who are in aviation or who have studied it thoroughly have any concept of the background of mathematics and science, the intense interest, and the weeks and months and years of study and experience that go into the making of that individual, an A. and E. mechanic. Because his knowledge is so difficult to acquire and because the expansion of aviation has moved them rapidly into positions at higher levels, we never seem to have quite enough of them. In times of national crisis these are the men who have kept our airfleet in the air for unbelievable hours, rather than idle for want of inspection and maintenance.

Where do these A. and E.'s come from? How do they acquire their skill and technical knowledge? In years past a man could hope to work as a helper and study at night for his certificate. Quite a number did. But the airplane and engine becomes more complex. The electronics and hydraulics features alone require deep study and practical application. More and more the industry has come to depend on the A. and E. schools to supply their needs. Today those schools are the principal source. Without them this essential supply of technicians cannot be maintained.

An A. and E. school is not quite like any other technical school. The need and requirement for equipment is greater. It takes years to plan and supply its plant, its machines, its operating mock-ups, its many engines, airframes, propellers, instruments, and test stands. Skilled teachers have labored years to develop a sound curriculum that lives and changes with industry's progress. It takes years to assemble and train a competent staff of instructors.

Now let us examine the prospects, under existing conditions, for the flow of A. and E. mechanics into the industry. I have here a copy of the Commerce Department's statistical report of January 24, 1952, which states the situation so clearly that it should be a part of the record this committee will consider. I invite your attention to some figures which should be explained. On January 1, 1952, there were 46 certificated private aircraft and engine mechanics schools with a

total of 4,954 students enrolled. Only 793 of those students were nonveterans. In other words, paying their own way.

Mr. BECKWORTH. Without objection, it will be inserted in the record at this point.

(The tabulation referred to follows:)

Statistics for CAA certificated mechanic schools—Compiled from Jan. 1, 1952, reports

1. Privately owned schools 46
   High schools, junior colleges, colleges, and universities 65
   Total 111

2.

Region	Students in training	Veteran students	Number graduated past 6 months	Number dropped past 6 months
1	4,327	1,659	348	1,448
2	1,375	1,088	193	523
3	1,173	492	188	181
4	542	287	146	151
5	160	99	43	62
6	1,696	991	452	1,171
7	188	80	27	32
Total	9,461	4,696	1,397	3,568

3. Number in training in the 65 high schools and colleges (1,634 in 1 high school) 4,507

4. Number in training in the 46 private schools:
   Veterans 4,161
   Nonveterans 793
   Total 4,954

5. Day students in the private schools:
   Veterans 1,896
   Nonveterans 664
   Total 2,530

6. Night students in the private schools:
   Veterans 2,295
   Nonveterans (99 in 1 school) 129
   Total 2,424

7. Number graduated from schools during past 1½ years:
   Private schools 4,540
   High schools and colleges 1,373
   Total 5,913

8. Night-school graduates of private schools during the past year 443
9. Of the 46 private schools—
   Have no students 5
   Have only night students 4
   Have only veterans in training 9
   Have less than 10 nonveterans in training 17
   Schools likely to close during 1952 35
10. 46 private schools less the 35 likely to close will leave 11 private schools by the end of 1952.
11. These 11 schools now have— *Percent*
   2,756 of the 4,954 students, or 55.6
   718 of the 793 nonveteran students 90.5
12. Of these 11 schools—
   1 has 276 of the nonveteran students.
   4 others have 227 of the nonveteran students.
   (These 5 schools have 503 of the 718 nonveteran students or 70 percent.)

Mr. BALFOUR. Now another important figure. From these same private schools, industry has obtained 85 percent of its A. and E. mechanics. With the end of GI training, and it is about ended now, these schools will have only one-eighth of their present enrollment. By the end of 1952, it is certain that these 46 schools will be left with less than 1,000 students, probably less than 800.

There are many causes for this lack of enrollments. The draft situation is an important one. Only a few prospective students understand that deferment is possible for the completion of such a course. Even if they do, most believe they can get the same training and knowledge with the Armed Forces, which is not the case as we will explain later. These courses are expensive. Many parents do not understand the nature of aviation technical training or what it can do for an ambitious boy. They believe he will do better with a college education, and that he will get more in college for the same financial outlay.

CAA's estimate of January 24, 1952, is that of the 46 schools, 11 now have 718 of the 793 nonveteran students, and of the 718, about 500 are enrolled in 5 schools. So it appears that not more than 11, probably not more than 5 of these A. and E. schools can survive beyond 1952.

The outlook for flying schools is a little better. The only reason that we have as many survivors as we do is that the flying school is usually a minor part of the operation and the operator often depends mainly on other sources of revenue. But as the input of students decreases, not only do we lose schools but we lose quality. The function becomes secondary, we cannot afford the equipment, the flight instructors, and the ground school staff to do the work properly. We are headed back to where we were in 1938 when only a handful of flying schools eked out a precarious existence. The CPT program saved us then. The number of CAA approved flight schools at the end of 1948 was 3,115. At end of 1950 it was 2,088 and as of January 31, 1952, it was 1,539, and most of these schools are qualified only to give the more elementary phases of instruction. The current depletion rate of flight schools runs about 60 a month.

Here is the significance of these figures, and the rapid depletion of these schools. From the record, the private schools have always been, and are today, the principal source of our civilian aviation skills. Eighty-five percent of our technicians come from those schools. The gentlemen of the committee can understand that to reduce the present supply by 85 percent will cause a serious, even a critical, situation. The private schools are practically the only source of civil pilots with commercial certificates, instructor ratings, instrument ratings, multiengine ratings, and air transport pilot ratings. Without these particular sources, the airpower of our country will be weakened and reduced to a critical and helpless stage until these sources or others are restored or developed, and that would require years of time, at tremendous cost.

In discussing airman training, one question is always asked: Why don't the airlines, factories, and depots do their own training or contract to have it done? The answer is that they do all that is economically possible through apprentice training, upgrading courses, instruction of specialists, and the teaching of new procedures involving new equipment. It does not appear practical for the airlines or aircraft industry to do basic training of the type we are discussing. Basic technical training requires at least a year of time. It is full-time training. It is costly and the objective is different from that achieved in present apprentice and other in-plant training. If an airline, or aircraft factory or an Air Force or Navy depot were to set up a basic training program, they would have no practical means

of holding the product of the school on the job. If the competitor offered higher pay than the original source could afford, the men would go there. One factory or one airline or even a number of them cannot carry the burden of such a program for the entire industry and the depots. It is not economically sound that individual plants, airlines, repair bases, depots or other operators go into the school business. Operating a successful technical school requires special talents and knowledge that is not a requirement for a successful operating company. Such an arrangement would aggravate the existing shortage. Skilled men would be taken from production and maintenance to set up more schools than we need. At the same time soundly organized schools would be going out of existence.

A small local A. and E. school requires an investment of $250,000. A completely equipped A. and E. school of any considerable capacity will cost $2,000,000 to build, equip, and start in operation. But you cannot buy the quality that comes through long experience of the staff and instructors. It is reasonable to conclude that the airlines and factories should continue to operate the business in which they are competent and that experienced operators should conduct the school operations.

Thought has been given to other possible sources. Some think immediately of the Air Force and Navy. The training in the services is excellent for its purpose, but the purpose is different. When the objective is the destruction of an enemy, the aircraft are operated and maintained in a different manner. These men are trained for maintenance, most of which is done in the field, with the actual repair work being done in depots. Besides the services need their highly skilled men and do everything possible to retain them. And when they do go into civil aviation they do so mostly through acquiring training in these schools we are now discussing. Service-trained mechanics and technicians, and military pilots, too, go to the civilian schools in great numbers for retraining. The majority of GI students in aviation schools had previously served with the Air Forces.

Most important is what happens when the defense needs become acute. Under mobilization conditions the services call back so many of their Reserves that we have shortages in every category of civil air power—agricultural, air transport, industrial, manufacture, and training. Considering other civil sources we learn that only a few A. and E.'s come from certificated aviation trades high schools. Colleges are the main source of engineers but only a few produce any technicians and then only in small quantity. The same is true of pilots. There are flight schools sponsored and conducted by colleges. The output is comparatively small, and very little of the product ever appears at the flying level of the industry.

We believe that provision for the airmen's training now under consideration is the only practical and safe means of meeting our immediate M-day requirements. The committee, and I'm speaking of a civilian committee, which has developed the requirements and studied the means of filling them, has worked with and in behalf of every important national aviation organization, all of whom favor such legislation. That committee has worked for months in developing the facts and the solution. It is the view of that group that the training

of 15,000 A. and E. mechanics, 6,000 pilots with advanced ratings, and 1,000 each of instrument and electronics technicians is essential for a 1-year program. They have prepared material showing the breakdown of costs. I have brought copies of that material for your use.

The airmen's training bills are designed to preserve essential aviation training potential and to utilize other manpower than the 18–25 age group likely to be drafted within the year. They avoid competition with the armed services for the young men in that group subject to early call from Selective Service, and to conserve other sources of potential for trained airmen. These include:

1. Youths under 18.
2. Men in the 18–25 year group not now regarded as acceptable military material.
3. Persons over 25.

The provision that 25 percent of the cost of the courses shall be provided by the prospective trainee will tend to limit enrollments under this program to earnest and sincere individuals. This legislation makes no provision for expenditure of Federal funds for food, housing, or incidental expenses. Requiring the individual to pay his own way to such an important extent will screen out those who have no serious interest in useful careers in aviation.

Briefly here is the situation: To meet M-day requirements and the immediate needs of the industry which must do the emergency job, civil aviation needs more trained airmen. To meet those needs and keep alive the essential training potential, the civil schools must be preserved. We must find a way to utilize and maintain this present national asset which can do the job and fulfill our needs much better than any other known means. The airmen's bills will do this. We urge favorable report and speedy enactment of this legislation on the basis of probable M-day requirements.

(The following additional information was submitted for the record:)

WHAT THE AIRMEN'S TRAINING BILLS COULD ACCOMPLISH WITH AN $18,000,000 APPROPRIATION

(A projection prepared by the task committee for the National Aviation Organizations supporting the airmen's training bills)

The purpose of H. R. 7073 and H. R. 7074 is: (A) To provide training of flight and ground personnel needed for immediate civil and depot needs and to provide skilled manpower to fulfill known M-day requirements. (B) To preserve as a national asset for airpower, the potential training capacity, facilities and skill of the private aviation schools. These schools must be used now to be preserved. Once abandoned, this potential is gone and there remains no other means for quickly fulfilling the continual requirement of civil aviation.

To meet the needs, a 1-year program is proposed to train indicated numbers of airmen at a total cost of not more than $18,000,000. Each trainee will pay 25 percent of the cost of the training received except in the commercial flight course where as a prerequisite for enrollment, a student must hold a current private pilot certificate.

Proposed numbers of each class of airmen to be trained, together with tuition fees, student contribution, and total Government costs are listed in the following table:

Class	Number	Approximate cost per course	Total cost	Total student contribution	Government aid
Technicians:					
A. and E. mechanic	15,000	$1,000	$15,000,000	$3,750,000	$11,250,000
Instrument technician	1,000	1,000	1,000,000	250,000	750,000
Electronic technician	1,000	750	750,000	187,500	562,500
Pilots:					
Instructor course	2,000	500	1,000,000	250,000	750,000
Instrument course	2,000	600	1,200,000	300,000	900,000
Commercial	2,000	1,500	3,000,000	(1)	3,000,000
				4,737,500	17,212,500
Plus 3 percent CAA administration cost					516,750
Total cost to Government					17,729,250

[1] Holding a current private pilot's license could be a qualification for enrollment in commercial flight course, under administrative procedure.

Mr. DOLLIVER. You refer in your statement, Mr. Balfour, to the fact that you are a proprietor, or have something to do with a training school.

Mr. BALFOUR. I am the hired man. I am the head of what is considered to be one of the greatest civil aviation schools.

Mr. DOLLIVER. What is the name of it?

Mr. BALFOUR. The Spartan School of Aeronautics, Tulsa, Okla.

Mr. DOLLIVER. I have heard of it. What is your approximate enrollment?

Mr. BALFOUR. Our present enrollment in all divisions of the school is approximately 850 students. Its peak enrollment has been 2,800.

Mr. DOLLIVER. You refer in your statement to the certification of these men by the Civil Aeronautics Administration.

Mr. BALFOUR. The certification itself is only an indication that the man has been examined by a Civil Aeronautics Administration representative and found to meet certain educational and skill standards, as well as physical standards to maintain aircraft, or to fly, whichever we are talking about.

Mr. DOLLIVER. I am talking about both, really. The Civil Aeronautics Administration sets the standards and gives the examination?

Mr. BALFOUR. That is right, or delegates the authority to give it.

Mr. DOLLIVER. Is that authority delegated to the Spartan School?

Mr. BALFOUR. In most categories we do our own examining and they check up to see that we do not fall down on it.

Mr. DOLLIVER. They accept your examination in lieu of the one that they might give?

Mr. BALFOUR. They do that necessarily because of the tremendous amount of work required to do all the examining. They do not do it in all categories, nor do they do it with all schools.

Mr. DOLLIVER. They do it with schools they think are qualified to give the examinations in their stead; would that be correct?

Mr. BALFOUR. Qualified and willing.

Mr. DOLLIVER. What are the different categories in which they give examinations?

Mr. BALFOUR. The main categories, of course, are the A. and E. and the development of the A. and E. You may go from that to the flight engineer, which is the combination of flier and an A. and E. The flight engineer is the man who rides the airlines as a third crew

member. They have a very difficult examination for that man. We think in Spartan a man should be an A. and E. first. Most people agree, so there is a progression from A. and E. to flight engineer. In the pilot category you have private pilots. You are all familiar with that term.

You have the commercial, which is the next step, and then you have certain rating certifications—instrument rating, instructor rating, multiengine rating, and then there is that very highly desired thing called an air transport pilot rating, which is a very difficult rating to achieve.

Mr. DOLLIVER. Will you explain the meaning of the term "A&E"?

Mr. BALFOUR. I anticipated that and I obtained a definition from the Civil Aeronautics Administration. He is an individual holding a mechanic's certificate with appropriate ratings issued by the Administrator. He must pass oral, written, and practical tests.

Mr. DOLLIVER. What do the initials A. and E. stand for?

Mr. BALFOUR. Aircraft and engine. He is an aircraft and engine mechanic, or he may be either one separately. He can get a certificate for aircraft, or he can get a certificate for engines. The requirement is a tremendously high level of technical and scientific knowledge. The requirement is so great that it is almost impossible for any human being to achieve those ratings with less than 48 weeks of intensified study, 40 hours a week, plus a considerable amount of experience on live aircraft. You just cannot teach a man on the blackboard, or from a textbook. You cannot possibly teach him this thing by correspondence.

In addition to his 40 hours he should, if he is going to get anywhere in his examination, have a minimum of 25 hours a week of preparation at home before he goes to school.

Mr. DOLLIVER. In addition to the 40 hours a week?

Mr. BALFOUR. Forty hours a week in class plus twenty-five hours of preparation, which is about the minimum. Most of our students spend a minimum of 3 hours a day studying, plus an extra amount of time over the week end.

Mr. BECKWORTH. I assume that he does that which you have described, 40 hours a week. State then what he is qualified to do in the various activities.

Mr. BALFOUR. Do you mean when he first graduates from school?

Mr. BECKWORTH. Right.

Mr. BALFOUR. In these times of great shortage it would seem that people think he is qualified to do most anything, but I do not agree. The amazing part of this thing is, as I have heard thus far in the hearings, some people seem to have the opinion that once you have completed a year of training the man is a thoroughly skilled man. As a matter of fact, he is only a beginner, in my opinion, and I would not want to ride in airplanes that were maintained only by an immediate A. and E. graduate. From that point on his skill will develop for the next 4 years, if he is a bright and live young man, and at the end of 5 years, in my opinion, he is somebody that you can look to for skill. But he has acquired in this 1 year a foundation of knowledge in an organized sense that he possibly cannot get on the job. Why?

Let us take the example of a young man who goes to the American Airlines, who are our neighbors in Tulsa, and they take most of our product. He has a leaning toward electronics or hydraulics. Let us

say hydraulics because it will take him less time in hydraulics. He goes in there and he gets some training and he gets some on-the-job experience, and then he gets some more training after he has gotten a little more experience, and at the end of 6 months he might be a fairly well-qualified hydraulics man and is eligible for a certain wage level. On the strength of this employment and his prospects, he goes out and gets married. He assumes financial responsibilities. Also, there is no one there to try to beat into his head that if he went on for 4 or 5 years in his apprentice training through every department he might be more competent to rise to a higher level. That is only natural. He does not understand that. He does understand that if he stays in that hydraulics department that he is set. He is going to get a journeyman's wage. Why should he leave that department and go somewhere else after an advancement that he cannot quite touch with his hands in a pay envelope? Ask anyone who sponsors the idea of apprentice training for A. and E. how many such a program has ever produced. To my knowledge, none.

Mr. DOLLIVER. Approximately a year is required in this course to get an A. and E. certificate; is that correct?

Mr. BALFOUR. That is right.

Mr. DOLLIVER. From what source do you recruit your students? Are they high-school graduates, or more than that, or less, educationally speaking?

Mr. BALFOUR. I will have to give you a little history there. Before we had the disruption of World War II, that practically our only source of A. and E. students was the high-school graduate. I started in this in 1936. At that time that was my first job in civil aviation. I was chosen to ring doorbells in Brooklyn and the Bronx and Manhattan, and I might admit that I worked up more of an appetite than revenue. If you were to try calling on 50 prospective students a day, running up five flights of stairs and being chased back down by an irate mother, you would learn what I mean. Why? The same feeling prevailed then as prevails now. "If I had the money, I would send my boy to college. I do not want him to be a greaseball."

We succeeded because aviation has attracted the attention of the American youth more than any other single thing in our history. We succeeded in getting them. Most of them were kids 18 years old. Some were older, 25 and even 30. I got one while I was at Roosevelt School who was 50. He had been saving his money all that time and he finally decided that he could get the education. The difficulty in those days was that you could not promise jobs and stick to your promise. There were a lot of boys who had faith in the growth of this industry.

The answer is at that time it was high school. Then came the war. We maintained our A. and E. school. I went to Spartan in 1939. Our sources then were foreigners, physically unfit, and women. Even before the end of the war when people were being discharged from the Air Force for physical unfitness, or for other reasons, we began to get the flood of students which is the tremendous backbone of our present A. and E. supply. From that one source, the Navy and the Air Force, we have had most of our students during the past 5 years, who went back to civilian schools like Spartan for a complete civilian course. When those men came to us with their 2, 3 and 4 years of aviation experience in the service, and who were smart enough to complete the

entire civilian course, they became extremely valuable. Those men did not need 4 years of added experience. They had the experience. Those men went to the airlines by the thousands and also to the manufacturers and the depots.

Mr. DOLLIVER. Those are the people doing the work on airplanes nowadays?

Mr. BALFOUR. They are doing the work now. Unfortunately, in one sense, and fortunately for them, unfortunately for the industry, a man who has that quality of training does not stay very long there at the working level. The expansion is so tremendous in so many directions. The call is so great for that kind of knowledge and skill that they dissipate, they move up.

In our company, in our own aero repair school (we operate one of the largest aero repair stations in the country), we have 27 men holding positions that have no direct relation to A. and E. work, and yet they are A. and E's. In other words, in my opinion, for aviation a man ought to have a good A. and E. education because a man out of a good A. and E. school is better for that level of work than a man with a college degree. I ought to know. I have a college degree and I know how useless it is in aviation.

Mr. DOLLIVER. You are not trying to say to us in your statement that the A. and E. school is a substitute for aeronautical engineering training?

Mr. BALFOUR. Not at all.

Mr. DOLLIVER. The thing that you are talking about is the practical level of dealing with the airplane when it comes down and needs overhauling, or needs going over, or if some segment of it needs to be fixed?

Mr. BALFOUR. That is what I am talking about.

Mr. DOLLIVER. You are not talking about aviation engineering at all?

Mr. BALFOUR. No.

Mr. DOLLIVER. One last question: I want to get some idea for the record how much it costs a young man to take this training. Suppose that some young man is interested in going to an A. and E. school and becoming skilled in that field. What could he look forward to as the expense of training?

Mr. BALFOUR. Ours is probably one of the most reasonable from the tuition point of view, one of the lowest.

The tuition is $720. That is $60 a month. The student must have $150 for tools and textbooks. Room and board at Tulsa is $60 a month. The very minimum the boy should have for incidentals—he has to have some recreation and amusement because the work is very hard and full time and very intense—he should have at least $25 monthly to take care of his laundry and a little amusement, so you come out roughly with $1,500 as the cost to you, the father.

Mr. DOLLIVER. Would you think that would be the average cost?

Mr. BALFOUR. That is in our school, but it is low. The average cost, I would say, would be around $1,650.

Mr. BECKWORTH. At the moment that he finishes that year, what is the average amount that he earns when he goes out into industry?

Mr. BALFOUR. A good average is $1.75 an hour.

Mr. BECKWORTH. On a yearly basis?

Mr. BALFOUR. Most of these outfits are high on overtime. I will give you, for example, a Texas boy. His father is a candy-store owner. He did not believe in this. This boy came to us when he was 17 years old and 6 months. He left us around 18 years old and 6 months. He stayed a little longer for a little instrument technician work as well as A. and E. work. Two years later he was earning $100 a week at a manufacturing plant, not with an airline. That is high because he is getting overtime. The wage level in the industry itself is not what you would call on the inducive side to kids going to these schools because they can go out and earn almost as much with no skill. It is the future that attracts them.

Mr. MACK. I was at the conference on industrial education at the University of Missouri last week, and at that time they informed me they were having difficulty in getting qualified teachers who had an A. and E. certificate, and I imagine that places some limitation on the training in the trade schools and technical high schools. I am just wondering what percentage or number of students you get from the technical high schools.

Mr. BALFOUR. Do you mean graduates?

Mr. MACK. Yes.

Mr. BALFOUR. One of the largest of those is an aviation trade school in the city of New York. The exact figures were given in the testimony not long ago from a CAA man highly qualified. The largest of the high schools giving A. and E. mechanics training had 1,634 students last year. Of that number 12 graduated and only 3 passed examinations and actually became A. and E.'s.

Mr. MACK. I did not know that it was designed to equip men for A. and E. upon graduation from their high-school training course. Is that true?

Mr. BALFOUR. The school I am speaking of is Manhattan Aviation Trades, which was headed at one time by a famous man in the industry by the name of Dan Grimm. You cannot take a youngster and put him in a high school and make an A. and E. out of him. He gets tired of it. He does not finish. It does not fit that young type.

I do not believe that I have told you of the critical need of these A. and E.'s. We are going to be 10,500 short in 1954 on the airlines alone. What does that mean? I think that you can realize it is pretty serious.

Mr. MACK. I thought that the technical schools were merely giving them a background.

Mr. BALFOUR. That is true.

Mr. MACK. What percentage of those students do you get as students in your school?

Mr. BALFOUR. Very few. I would guess that less than 5 percent of the students enrolled in Roosevelt had such previous training.

Mr. MACK. Do you think the reason you do not get more students from these technical schools is because many of them are taken into the aircraft industry upon graduation without having an A. and E. certificate?

Mr. BALFOUR. I am not competent to answer the question. I have not made any research on it. I would not want to give you a prejudiced answer. My feeling is that they do not go in in great numbers. You are apt to find them in the corner garage.

Mr. MACK. After they have had the aviation background?

Mr. BALFOUR. In high school. When they get it in a college—and there are colleges that offer this, too—they rarely go after their A. and E. certificate because the concurrent training that they have received gives them a different perspective on employment, so they go to work at levels that are not the operating A. and E. level, and they do not need an A. and E. certificate. It is a hard thing to write that examination anyhow.

Mr. HESSELTON. Does your school afford any assistance to those taking training in any way, like scholarships or a loan program?

Mr. BALFOUR. Our school is privately owned. It has no tax support or endowment. It is operated on an income level that makes it financially precarious. It is a hard job to break even. For that reason, we cannot deal in anything that risks financial loss, nor do we feel we are in the banking business or the loan business, and we stay out of it.

We have right now, I estimate, nine students in Spartan of whom five are on complete scholarships; the other four partially, and they are exceptional cases. One is a foreigner, a French boy, the only one we ever had. He was quite a hero in the resistance. Three are children of old friends of mine in the Air Corps, who are dead. They would not have any other means. Others are deserving youngsters that Spartan is helping. As an organized thing of any consequence the answer is "No," and that is true for any privately owned aviation school, I am sure.

Mr. HESELTON. The fact that led me to ask that question was what you said about the young man from Texas. It certainly looks at this time as though the opportunities in the aircraft industry and the airline industry are relatively good and that a loan program might well be established, a revolving fund or something of that nature, that would induce a great many other people to come into the program who do not have the means of doing so at the present time.

Mr. BALFOUR. That is right. I have had experience in that. I am kept aware of what is going on from my inquiries. We get about 80 to 100 letters a day from youngsters and grown-up men who are interested in aviation training. The trend is more and more to those who cannot quite make it. They want to know what the part-time job situation is. When you develop it, the majority of those fellows need about what this bill provides, about 50 percent of the cost of the whole thing.

Mr. HESELTON. Do you interpret the bill to mean that they would supplant the current situation where a substantial number of young people are getting training on their own, or is it intended to go beyond that, and, if so, only to apply to those who are not financially able to finance their own training?

Mr. BALFOUR. I do not feel that I can answer the question. I do not know how far it would go. I do not think that it was intended for those who could afford it, but how you would distinguish would be a delicate administrative matter.

Mr. HINSHAW. At the present time most of the students are entered under the GI bill. A very small percentage, perhaps 7 or 8 percent, are there on their own. When the GI bill has passed on to its great reward the numbers who are now willing and able to carry

on this instruction will sink to a very low level, which means that the number of qualified graduates of these schools will sink to a low level, which will go way below any requirements for mobilization purposes.

Mr. HESELTON. I notice on this tabulation from the CAA that as of January 1 of this year there were 9,451 students in training and I believe that is intended to mean in privately owned schools, colleges, and universities, and, of that, 4,696, or a little under one-half, are veterans.

Mr. HINSHAW. That is right.

Mr. HESELTON. That is one of the reasons I wanted to get it clear whether it is intended to extend in a sense the opportunities that were afforded under the GI bill, or if it is intended to supplant the whole present program and put all the students under this particular training program.

Mr. HINSHAW. It is intended to supplant the entire program and to improve the numbers that would ultimately come out as graduates of these A. and E. schools.

Mr. HESELTON. There would be no question of financial ability?

Mr. HINSHAW. The 25 percent which would be paid by the student, plus his expenses outside of that, would constitute a very serious expense to most boys who would go into this sort of thing. I would like to ask Mr. Balfour whether——

Mr. MACK. You indicated that the high-school bracket is not the correct category in which to train an A. and E. mechanic. What bracket would you recommend?

Mr. BALFOUR. We do well with anything that is a high-school graduate. We always look pretty carefully at anyone over 30. We wonder why they are starting at such an advanced age. The best bracket is 18 to 25. There is nothing wrong with 25 to 30. The best comes between 18 and 25.

Mr. MACK. How long have these 46 schools been in operation, or do you have that information available?

Mr. BALFOUR. All the way from 25 years down to the more recent ones, which is 6 or 7 years. I could not answer the question accurately.

Mr. MACK. Some of those were started about the time of the GI bill.

Mr. BALFOUR. Yes; some of them were. You will see the situation clearly in the CAA statement, that some of them have only, even at this time, a few GI students. In other words, they have none of the paying students.

Mr. MACK. I certainly realize the need for qualified A. and E. mechanics. I know that you understand that. The committee appreciates your fine statement this morning.

We will insert in the record at this time the following correspondence:

A letter from Miles D. Kennedy, director of the American Legion; a letter from Louis R. Inwood, president, Airport Operations Council; a letter from Mr. C. E. A. Brown, president of the National Association of State Aviation Schools; and a letter from Mr. H. W. Bahnman of Harlingen, Tex.

(The letters referred to are as follows:)

THE AMERICAN LEGION,
NATIONAL LEGISLATIVE COMMISSION,
Washington, D. C., April 25, 1952.

Hon. ROBERT CROSSER,
Chairman, House Interstate and Foreign Commerce Committee,
House Office Building, Washington, D. C.

DEAR CONGRESSMAN CROSSER: I understand hearings are scheduled to be held by your committee on April 28 on H. R. 7073, same being a bill to aid in meeting the defense mobilization requirements of the United States by providing for the training or retraining of civilian aviation personnel.

Enclosed please find copy of resolution No. 679 adopted at the 1951 national convention of the American Legion on the subject of the Government developing a civilian pilot-training program. We would appreciate it if you would be good enough to have this resolution incorporated in the minutes of the hearing on H. R. 7093.

Thanking you for your courtesy, I am
Sincerely yours,

MILES D. KENNEDY, *Director.*

RESOLUTION NO. 679

GOVERNMENT DEVELOP CIVILIAN PILOT-TRAINING PROGRAM

Whereas there are many pilots who have been unable to maintain their flight proficiency because of the high cost of private flying; and

Whereas there are many young men willing to learn to fly in their spare time if facilities are provided; and

Whereas, a large reservoir of trained pilots for service and emergency duties is highly desirable: Now, therefore, be it

Resolved by the aeronautics section of the national security committee of this convention, That the government be encouraged to develop—

(1) Some type of civilian pilot-training program to train qualified men to learn to fly, provided these men agree to take any assignment given them by the Government after the training is completed.

(2) A training program which would enable those with ratings of private pilot or better to maintain their flight proficiency through supervised instruction in civilian pilot-training programs at the expense of the Government and under control of the appropriate agencies of the Armed Forces.

AIRPORT OPERATORS COUNCIL,
Washington, D. C., April 28, 1952.

HOUSE COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
House of Representatives, Washington, D. C.

GENTLEMEN: By your invitation, the Airport Operators Council submits herewith a statement in support of H. R. 7074, which proposes to aid in meeting the defense mobilization requirements of the United States by providing for the training or retraining of civilian aviation personnel.

The Airport Operators Council is an association of owners of the Nation's large civil terminal-type airports. A list of the officers and members is attached. This group today represents the trustees of the largest financial stake in air transportation. In providing the terminal-type and secondary airports essential to air transportation and general aviation, the airport operator has knowledge of the trend of demand for trained personnel in all fields of aviation; can confirm that there is a large shortage today of skilled aviation workers; believes that it would be in the public interest to provide Federal assistance to expedite the training of aircraft and engine mechanics, aviation instrument and electronic technicians, aircraft pilots and such other flight and ground personnel as may be deemed necessary to establish and maintain a body of trained aviation manpower to make strong our civil aviation which is the hard core of air power, constantly drawn upon to meet the defense mobilization requirements of the United States.

We believe that the provisions of H. R. 7074 would effectively and economically provide, in the shortest possible time, the desired increase in trained aviation manpower.

Respectfully submitted.

AIRPORT OPERATORS COUNCIL,
LOUIS R. INWOOD, *President.*

AIRPORT OPERATORS COUNCIL, A LIST OF MEMBERS, MARCH 1, 1952

Mr. Donald H. Connolly, director, Baltimore City Department of Aviation, Friendship International Airport, Baltimore, Md.
Mr. Edward H. McGrath, commissioner, State airport management board, Logan International Airport, Boston, Mass.
Mr. L. W. Wulfekuhler, secretary and general manager, Lockheed Air Terminal, Inc., Burbank, Calif.
Commissioner Oscar F. Hewitt, department of public works, city hall, Chicago, Ill.
Major John Berry, commissioner of airports, city of Cleveland, Cleveland Hopkins Airport, Cleveland 11, Ohio.
Mr. David G. Davis, director of aviation, Stapleton Airfield, Denver, Colo.
Mr. Peyton Harrison, director of aeronautics, Hawaii Aeronautics Commission, Honolulu Airport, Honolulu 17, Hawaii.
Mr. E. E. Bentley, engineer-manager of airports, 940 Main Street, Jacksonville, Fla.
Mr. Louis R. Inwood, director of aviation, aviation department, 400 Richards Road, Municipal Airport, Kansas City, Mo.
Admiral John W. Reeves, Jr., general manager, department of airport, city of Los Angeles, 5800 Avion Drive, Los Angeles 45, Calif.
Mr. Foster V. Jones, secretary and director of airports, Louisville and Jefferson County Air Board, Lee Terminal Building, Standiford Field, Louisville, Ky.
Mr. G. D. Albrecht, manager, Memphis Municipal Airport, Memphis, Tenn.
Mr. A. B. Curry, director, Dade County Port Authority, Post Office Box 757, International Airport Branch, Miami, Fla.
Mr. Eugene A. Howard, director of public works, 303 Courthouse, Milwaukee 3, Wis.
Mr. Fred Glass, director of aviation development, the Port of New York Authority, 111 Eighth Avenue, New York 11, N. Y.
Mr. A. H. Abel, port manager and chief engineer, port of Oakland, Oakland, Calif.
Mr. Lee Huff, manager, Omaha Municipal Airport, Omaha, Nebr.
Mr. J. Victor Dallin, chief, bureau of aeronautics, Philadelphia International Airport, Philadelphia 42, Pa.
Mr. Walter P. Fulkerson, superintendent of airports, Sky Harbor Airport, Phoenix, Ariz.
Mr. J. B. Sweeney, director, Allegheny County Department of Aviation, 510 County Office Building, Pittsburgh, Pa.
Mr. John J. Winn, general manager, the Port of Portland, Building No. 7, North Lagoon Avenue, Swan Island, Portland 18, Oreg.
Mr. Conway B. Briscoe, director of public utilities, room 312, city hall, St. Louis, Mo.
Mr. Robert Aldrich, director, Minneapolis-St. Paul Metropolitan Airports Commission, 2429 University Avenue, St. Paul, Minn.
Mr. J. H. Turner, director of public utilities, city hall, San Francisco, Calif.
Mr. Salvador V. Caro, general manager, Puerto Rico Transportation Authority, box 3508, San Juan, P. R.
Mr. G. T. Treadwell, general manager, port of Seattle, box 1878, Seattle 11, Wash.
Mr. W. A. Berlin, director, Hillsborough County Aviation Authority, Tampa International Airport, post office box 1549, Tampa 1, Fla.
Mr. Charles W. Short, manager, Tulsa Municipal Airport, box 2547, Tulsa, Okla.
Mr. Bennett H. Griffin, airport administrator, Washington National Airport, Washington, D. C.
Mr. Emory L. Cox, director, board of park commissioners, Wichita, Kans.

NATIONAL ASSOCIATION OF STATE AVIATION OFFICIALS,
April 21, 1952.

Hon. ROBERT CROSSER,
Chairman, Interstate and Foreign Commerce Committee,
House of Representatives, Washington, D. C.

DEAR MR. CROSSER: The following statement is submitted with respect to H. R. 7073 and H. R. 7074 and it is respectfully requested that this letter be included in the records of the committee hearings on these bills.

The membership of the National Association of State Aviation Officials includes the State officials of the 43 States and the Territories of Alaska and Puerto Rico having a State agency or commission charged with the responsibility of fostering,

promoting, and regulating civil aviation. Therefore, the members of this association are public officials whose interest in aviation is primarily that of public service, national defense, and economy, rather than that of a personal financial interest.

The members of the association, who are in continuous and close contact with all segments of the aviation industry, are almost unanimous in their alarm over the critical shortage of trained personnel currently available for employment by the scheduled and nonscheduled airlines, the local aircraft dealers and operators, aviation schools, aircraft repair shops, aircraft factories, and military repair and maintenance depots.

They are also seriously concerned over the effect the present shortage of trained aviation personnel and the lack of a healthy "general aviation" industry will have on the national defense if the United States should suddenly become engaged in a major war.

It is a well-known fact that a very large percentage of trainees from the civilian pilot training program and the war training service, from 1941 to 1945, upon graduation, immediately obtained employment in civil aviation or entered one of the military aviation services. This was due, we believe, largely because many of the trainees were required to enter into firm agreements whereby they would accept employment with certain military contract schools or were enlisted in the Army or Naval Reserve before they commenced training. However, there is little evidence that either the industry or the military services obtained more than a small number of trained aviation personnel from the thousands of Veterans' Administration program trainees under which the Federal Government financed the entire cost of training, in addition to certain subsistence costs, while requiring no assurance that the students would engage or accept employment in aviation upon completion of his training even though the opportunity existed.

The National Association of State Aviation Officials is therefore opposed to 100-percent Government financed training unless the trainee is a member of the Armed Forces or is under a general contract of some type requiring his acceptance of aviation employment upon completion of his training. The association is also opposed to the financing of even a substantial part of the training unless there is a reasonable assurance that the trainee will accept employment or engage in the aviation industry if an opportunity exists.

H. R. 7073 and H. R. 7074 provide for student participation to the extent of 25 percent of the cost of training and assurance on the part of the trainee that he will engage in or remain available for aviation employment or service. These provisions appear to be satisfactory; however, it is respectfully suggested that the committee might inquire of the Secretary of Commerce as to the manner in which he would obtain this assurance from the trainee and the ability of the Department of Commerce to require compliance on the part of the trainee.

In view of the shortage of trained aviation personnel that exists in the United States at the present time, which may, to an ever-increasing degree, adversely affect the civil aviation reserve required for adequate national defense, and being of the opinion that this condition will not be alleviated without financial assistance to aviation pilot and technician trainees by the Federal Government, the NASAO strongly recommends approval of these bills by the committee and early adoption by the Congress.

Respectfully,

C. E. A. Brown, *President.*

Statement of Position of the Department of Aeronautics, State of Illinois, on Airman Training Legislative Proposals, S. 2892, S. 2803, H. R. 7074

It is respectfully submitted that consideration of this legislation should be considered from a twofold aspect:

(1) Adequacy, productivity and economy of airman training as presently predicated and pursued, with relation to satisfying foreseeable military requirements and consistency with the Nation's economy.

(2) If the finding as to the above consideration is in the negative, the adequacy, productivity, and economy of the initial phase of airman training as would obtain through utilization of civilian facilities, personnel, and experience.

There would appear to be a very serious question, even assuming all other factors were favorable, whether the present system of military training of airmen in the pilot and technical categories is and will continue to be adequate to meet military

requirements. It is further suggested and urged that these other factors are not favorable, but rather that—

(1) Per-hour or per-student costs involved in utilizing advanced and relatively-large and complex equipment is disproportionately costly, and may prove to be running between $100 and $150 per hour;

(2) The attrition rate due to "washouts" attributable to both speed and complexity of the equipment used and the lack of an earlier familiarization and aptitude screening of students is disproportionately high; stated in another way, students are washed out who could have been salvaged were they given the opportunity of generally acclimating themselves under less trying conditions and in more simple equipment, and costs, time, and manpower are fruitlessly expended on students who inherently do not have requisite basic aptitudes;

(3) Prewashout, voluntary resignations from flight training status due to psychological factors attendant upon being confronted at the outset with the necessity of assimilating procedures and pilot skills involved in advanced and complex equipment may well be found to be disproportionately high.

Even if an attempt were made to increase the scope of airman training facilities on the present basis, it is difficult to perceive where the requisite trained instructor cadre would come from.

Assuming that it be found and determined that the situation with respect to the foregoing factors is such that other and supplementary measures should be provided for and activated, it should be recognized as being a matter of the most serious concern that civilian airman training facilities and personnel are becoming nonavailable at an ever-increasing rate, due to a number of factors including, but not limited to—

(1) Lack of business;

(2) Drain-off of qualified instructor personnel;

(3) Unfavorable competitive economic position, as engendered by the effect of mobilization upon equipment and labor markets.

It should be recognized that as regards the Nation's total effective and potential airpower, in its broadest sense, including all of its military, scheduled air-carrier and nonscheduled commercial and noncommercial aspects, the irreducible essential element and backbone is the collective product of the facilities, staffs, experience and know-how of our civilian airman training agencies, operators, and airports. Once dissolved or dispersed, it will at the very best be tremendously difficult ever to reassemble it into a training force in being. Not to be lost sight of is the fact that if these concerns discontinue business, so also very largely will the airport facilities associated with such business go out of existence and cannot be restored or substituted for except at exorbitant costs.

Every consideration would appear to bespeak the timely formulation and activation of a program which has as its end a large backlog of adequately screened and indoctrinated airman personnel to meet the civil and military needs of such basic skills as will readily lend themselves to advanced training as will preserve and fully utilize to the best interests of the Nation's total air power requirements and its economy the civil training facilities as are available and can be thereunder developed, and as will work to preserve our system of airports and aviation skills and facilities. It is respectfully suggested and earnestly urged that failure to do so is a luxury in which this Nation cannot now afford to indulge. Likewise, the monetary and manpower savings to the Defense Establishment would appear to be arguments of persuasive if not controlling force.

Of the several related bills now introduced, the form and language of S. 2892 is considered as being preferable.

Respectfully submitted.

JOSEPH K. MCLAUGHLIN, *Director.*

HARLINGEN, TEX., *April 21, 1952.*

Hon. LINDLEY BECKWORTH,
House Office Building, Washington, D. C.

DEAR CONGRESSMAN: I have received your "Notice of Hearings," to be held in Washington on Monday, April 28, 1952, regarding H. R. 7073 and H. R. 7074. I regret that it will be impossible for me to attend these hearings, even though I know they are of utmost importance. In the event any future dates come up on legislation of this type, I would appreciate knowing of the time and date.

Certainly it is obvious to anyone connected with the industry, whether he be civilian or military, that our pilot pool is rapidly being depleted. I believe the

cause of this depletion is not only due to the expanded military requirement and continuous need of civilian aviation, but also due to the fact that Father Time takes his toll through age, plus the responsibilities of parenthood. Agricultural aviation likewise is in need of many pilots with ability and experience for crop dusting, spraying, seeding, etc.

You are aware of the difficulties that have appeared lately with Air Force Reserve pilots. Their age and responsibilities have robbed them of much of their alertness and daring which really makes it a hazard for these older men to continue as military pilots. Furthermore, their value in combat has deteriorated considerably. We are definitely in need of a Government-sponsored training program to reach the late-teen-age group.

The present cost of training military pilots is excessive. I am sure that the over-all cost of training military pilots exceeds $80 per hour during the first 130 hours of training. Conservatively, the first 15 hours of this program is expended in finding out whether the cadet would like to fly and can adapt himself to the field of aviation. Fifteen hours multiplied by the approximate 1,200 cadets starting fllight training each month, equals 18,000 wasted hours, at $80 per hour equals $1,440,000 per month or $17,280,000 per annum.

A civilian-training program can be carried forward while the boys are still living at home at a cost of approximately $8 per hour. Thus 43,200 men could be trained annually in a better manner, by giving each trainee 50 hours at $8 or a total of $400 per man. This equals the savings as outlined in the above paragraph. Since present military requirements are only one-third of the 43,200 men, they could take the top third for further training and get a better caliber cadet. The next third would suffice for civilian need and the lowest third of the group would be eliminated for various reasons as not fit for aviation flight training. Even these men would not be wasted since many could qualify for for the other phases of aviation, such as maintenance of aircraft, navigators, bombardiers, etc. Thus the program would supply the need of both civilian and military. This program should be supervised by a department familiar with the possibilities as well as the shortcomings of this program, namely the Civil Aeronautics Administration. They are in a position to regulate and sponsor this program with very little, if any, additional expense to the Government.

A program of this type would also assure our country of continued airport facilities and undoubtedly even expand the number of airports now available for civilian use. Indirectly it would be a boon to the civilian aircraft manufacturers, as well as assisting small communities in maintaining air contact and in having airports available in the event of a national emergency.

You may use this letter or any part thereof, in any manner you see fit. Although I am still a director of the Texas State Aviation Association, due to the fact that I am the immedite past president, I am no longer connected with the aviation industry and any remarks made are not for any future personal gain.

I sincerely hope the final bill can bring about the above-mentioned program, I am certainly in favor of civilian flight training sponsored by our Government.

Cordially,

H. W. Bahnman.

Mr. Mack. The committee will stand adjourned until 10 o'clock tomorrow morning.

(Whereupon, at 12.30 p. m., the committee adjourned until 10 a. m. the following day.)

CIVILIAN AVIATION PERSONNEL TRAINING

TUESDAY, APRIL 29, 1952

HOUSE OF REPRESENTATIVES,
COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
Washington, D. C.

The committee met at 10 a. m., Hon. Lindley Beckworth (acting chairman) presiding.

Mr. BECKWORTH. We will call at this time Mr. S. G. Tipton, general counsel for the Air Transport Association of America.

STATEMENT OF S. G. TIPTON, GENERAL COUNSEL, AIR TRANSPORT ASSOCIATION OF AMERICA

Mr. TIPTON. Mr. Chairman and members of the committee, my name is S. G. Tipton. I am general counsel of the Air Transport Association of America. The association includes in its membership practically all of the certificated airlines of the United States.

I welcome this opportunity to appear before you to give you our views in support of H. R. 7073 and H. R. 7074. The purpose of these bills is to aid in meeting the defense mobilization requirements of the United States by providing for the training or retraining of civilian aviation personnel.

The Department of Commerce and the Department of Defense, together with the Chairman of the Civil Aeronautics Board, made a report to the airline presidents on March 26, 1952, setting forth the plan for civil-aviation mobilization, including the basic requirements of a Civil Reserve Air Fleet. The gist of this plan is that the scheduled air-transportation industry is expected to modify 330 of its four-engine airplanes so that they will be capable of military-support operations upon 48 hours' notice. The scheduled airlines have been requested to provide these airplanes, under contract to the Air Force, with airline crews. This represents about $275,000,000 worth of equipment, plus the additional millions represented by shops, hangars, spare parts, and trained know-how. This also means that, of the 505 four-engine airplanes now owned by the airlines, approximately 65 percent of them will be made available for military operations when and if they are required. The whole Civil Reserve Air Fleet will be capable of providing more than twelve times the capacity furnished the military by the scheduled airlines at the start of World War II. Within the next 2 years it is probable, considering the airplanes now on order by the airlines, that the scheduled airlines will be capable of doubling their potential contribution to national defense.

With regard to the manpower requirements necessary to operate the Civil Reserve Air Fleet in time of emergency, as well as to continue the civil air-transport service which is necessary to the civilian economy,

I should like to quote to you the views of the Department of Commerce and the Department of Defense as reported to the airline presidents at the meeting of March 26, 1952, referred to above.

MANPOWER REQUIREMENTS

There is an acute shortage of skilled aviation manpower based on both present and M-day requirements. This has been aggravated by the constant drain on trained personnel in the industry caused by our sustained airpower build-up. The joint agreement between the Secretary of Defense and the Secretary of Commerce, specifying the Civil Reserve Air Fleet to be available on 48 hours' notice, has created known requirements for flight crews to operate this fleet, and additional ground personnel to carry out its operation. Based on an assumption of 100 hours per flight crew, 3.5 crews per aircraft will be needed. Current utilization of aircraft in the air transport field averages about 8 hours a day, but would go up to 12 hours or higher in wartime. There would be created an immediate need for 50 percent increase in man-hours of labor. The NSRB Task Group on Aviation Manpower estimates a deficit of 19,000 people in all categories (p. 65).

With regard to the airline manpower deficit, we consider that this is in categories which require extensive training, such as pilots, navigators, flight engineers, mechanics, and radio and electronics experts. The National Security Resources Board has analyzed these deficits by classes, but since their studies have a security classification, I cannot give you the details at this time. I presume the NSRB reports are available to the committee, however.

The Department of Defense has requested that the minimum crew composition of aircraft, such as the DC–4 and DC–6, be a pilot, copilot, navigator, and flight attendant, or a total of four, with an additional pilot, a flight radio operator and/or flight engineer if the operation requires it. On a Boeing Stratocruiser and Constellation the minimum crew of five is considered to be a pilot, copilot, navigator, flight attendant, and an engineer. A third pilot and/or a flight radio operator may be added if required by the type of operation involved.

In our normal peacetime operations, most crew members fly only 85 hours per month. The daily utilization of the airplanes by the carriers does not average more than about 8 hours per day, and an average of approximately 3.4 crews per aircraft is used to operate them.

If the daily utilization of the planes is increased to 12 hours a day, or an increase of 50 percent, then the 330 airplanes contributed by the scheduled airlines have the lift potential of a total of 495 airplanes, but personnel requirements are increased.

If the monthly flying hours of the crew were not increased, this would require more than 5 crews per aircraft, but assuming that the flying hours were increased to 100 hours, then a minimum of 4.3 crews per aircraft would be required for 12 hours' utilization. Thus, one Constellation would require a minimum of 21.5 crew members for mobilization operations, 16.5 of whom are skilled personnel. In normal domestic operations, only 10.2 skilled crew members would be required for the same airplane.

With 50 percent increase in daily utilization for mobilization operations, the maintenance and overhaul periods would occur three times in a given period instead of the usual two. Consequently, man-hours of mechanics increase at least 50 percent.

The use of the airline fleet remaining after assignment of airplanes to military operations also will be stepped up proportionately to meet

the needs of the civilian economy. Thus, more pilots, mechanics, and so forth, will be needed than would be required to operate the same airplanes on a peacetime basis.

At the present time, the scheduled airlines employ approximately 100,000 individuals in all phases of their operations, and about 35,000 in skilled categories. They are currently utilizing aircraft approximately 8 hours per day on an average for the industry. Should the utilization be increased to 10 hours per day, this would require approximately 25-percent increase in man-hours, or 8,750 more individuals. If the utilization goes up to 12 hours per day, then a 50-percent increase in man-hours is necessary, or a total of approximately 17,500.

There is one phase of this problem which the bills do not attempt to solve, however, and which we should like to bring to your attention—namely, that adequate procedures still are not available to assure the airlines that deferments from Selective Service and exemptions from recall to Reserve units can be obtained to permit them to fulfill their obligations under the mobilization plans. I feel sure that witnesses for some of the Government agencies can give you further information on this phase of the problem, and I shall, therefore, not go into the details.

In closing, I want to reemphasize to you gentlemen that, although 19,000 people may not seem like a large number, they present a critical manpower problem to the airline industry in making available its planes to the defense effort, and any legislation which contributes to the fulfillment of the manpower requirements for mobilization should be in the best interest of the Nation.

Thank you.

Mr. HINSHAW. I would like to ask if the figure of 19,000 people that is emphasized two or three times in the course of your remarks includes the increase in numbers required for the operation of the airlines with the remaining aircraft which they expect to retain for the civilian economy, or is it only for the airlift that is to be provided by the 350 airplanes going into Federal service?

Mr. TIPTON. It is my understanding that that deficit covers the entire fleet; one section being the one that is devoted to military service and the other section of the fleet devoted to civilian service. That figure of 19,000 covers the deficit with respect to both of them.

Mr. HINSHAW. Then you point out in a couple of paragraphs ahead of that remark that if the utilization of aircraft goes up to 12 hours per day from the present 8, there is a deficiency of 17,500 personnel. Is it correct to assume it would be necessary for airlines to step up the plane utilization of their own craft and thus require an additional 17,500?

Mr. TIPTON. It is my understanding that the figure of 19,000, which was developed by the NSRB indicates the total deficit of skilled manpower for the air-transport industry for both military contract operations and increased utilization of the civilian fleet remaining.

The 17,500 figure is an arithmetic calculation which we made based upon a 50-percent increase in utilization as related to the present proportion of skilled manpower to the total personnel in the industry at the present time.

Mr. HINSHAW. Is the figure of 17,500 correct for the additional manpower required to operate only the civilian portion of the fleet?

Mr. TIPTON. I would say that the deficit in the civilian portion of the fleet will be only a portion of that figure.

Mr. HINSHAW. Has any estimate been made, or computation, or compilation, of the total number of persons now serving the airlines who are in the Reserve of one force or the other of the military?

Mr. TIPTON. Yes; there have been some computations of that. Among our pilot personnel which number about 8,500, 40 percent of them are Reserves. Among the mechanics, of which we have about 22,500, about 10 percent are in the Reserves.

Mr. HINSHAW. Therefore, in the event these persons were called into active duty you would have to make up a deficit of something like 3,200 in the pilot category and 2,200 in the mechanics category in addition to those deficits which have already been stated.

Mr. TIPTON. That would be the case. If, for example, those Reserve personnel were called now, that would certainly be the case. If there should be mobilization operations, I would certainly expect and hope that in view of the fact that a substantial portion of our fleet is being used in contract service for the military, that the members of the Reserves would be regarded as performing their military duty by continuing to serve with the air lines; otherwise, we would be very much hampered in trying to perform service for the military if we could keep those people on the job.

Mr. HINSHAW. I would assume that some similar deficit would exist among the nonscheduled carriers who are not members of your association, although perhaps not so large in numbers.

Mr. TIPTON. I just do not know enough about their situation, Mr. Hinshaw, to comment at all.

Mr. HINSHAW. Perhaps it might be related in terms of numbers of aircraft of given categories that are employed by them, because naturally they would be asked to step in and do their part as well as the certificated carriers.

Mr. TIPTON. Under the Civil Reserve Air Fleet plan, the nonscheduled air carriers are expected to contribute as of right now 25 to 30 airplanes, and depending upon their current utilization and their current staff of personnel, I am quite sure there would be some deficits there, though I have no idea how much it would be.

Mr. HINSHAW. From the manpower standpoint then, the entire air industry, civil aviation industry, would show a deficit of manpower in the event of full mobilization of something on the order of 20,000 to 25,000 people; is that correct?

Mr. TIPTON. It appears that would be about right; yes.

Mr. HINSHAW. The committee is interested in some remarks that were made by a previous witness concerning on-the-job and apprentice training.

Is there a program for on-the-job and apprentice training in the airlines?

Mr. TIPTON. I cannot make an answer to that which would be applicable to the entire industry because some of the airlines handle their personnel problems differently from the others. I can make this statement: That in recruiting personnel of the skilled categories, the airlines make every effort of course to hire trained people—as in the case of mechanics, that have an A. and E. license—and we of course in all cases hire pilots that are licensed by the Government. From that point on they get training by the airlines.

In the case of mechanics, very substantial training programs are conducted. In some cases the mechanics will remain in an apprentice or training category for 3 or 4 years after they are hired. In the case of pilots they get a substantial amount of training before they are ever put on board an airplane, and then, of course, they are put in as copilots and they are under constant training then until they move over onto the left-hand side, that is, become captains.

Mr. DENNY. In both wars I was engaged in the training of pilots and ground crews, and after I got out of the Second War I was chairman of the on-the-job training committee of the American Legion of Pennsylvania, and I saw some of the difficulties these boys had who had had special training in the Air Force.

I note on page 3 of the bill under section 6 (2) the following language:

> No person shall be accepted for training unless he furnishes assurance satisfactory to the Secretary of Commerce that upon completion of such training he will engage in or remain available for aviation employment or service.

These young men had a terrible time getting jobs with the corporations. Some of the unions were very reluctant to take them on, especially the electrical unions, and I found hundreds of them that went back to soda jerking because they could not get jobs for which they had been trained in the Air Force. It was a pretty bad situation, and I think tremendous inducements have to be offered to these young men to get them in unless they have some assurance that they are going to get jobs of this kind when they get out.

Mr. TIPTON. As far as the present situation is concerned I would feel sure that there is no problem about the absorption of a very substantial number of the persons who would be trained under this bill. At the present time, while our situation at the moment is not critical, our personnel people are having to dig pretty hard to find men in these skilled categories.

Now, I think when you consider that fact alone with the fact that the airlines have on order at the present time for delivery within the next 2½ years 328 transport airplanes which will result in additional need for mechanics and flight-crew personnel, that as far as giving the assurance that the Secretary is expected to require under that section, they will be able to give that assurance.

Mr. HINSHAW. I would not be surprised but what a person now coming from the Armed Forces back into civil life qualified as a crew chief would have very little difficulty in obtaining positions in private industry in connection with aviation, but if they are trained to the extent that some of the enlisted personnel are trained in the armed services, for example, as to how to take off a carburetor, and that is the end of the job, or something of that sort, of course they are not what you would call skilled or trained personnel.

Mr. DENNY. I thought that same thing in 1945 when I got out. I soon found, just as you say, that some of the schools were definitely politically inclined and were selected for political reasons. Some were very, very good schools. A boy had a terrible time getting a job in civil life, not necessarily connected with aviation, but in electronics and radio and things of that kind.

Mr. HINSHAW. I am not a personnel manager, but I would assume if a man was good he would not have much trouble getting a job.

The A and E mechanic, or the electronic technician who is well trained, is apparently in high demand. If he is partially trained, or

if he is a person trained for just one little thing only, he is not particularly in demand, as I understand it.

Mr. TIPTON. That is correct. The A and E mechanic is in great demand at the present time.

Mr. HINSHAW. Do you know how many mechanics out of the crews that are presently employed in the airlines hold A and E mechanics licenses?

Mr. TIPTON. Approximately 70 percent of the airline mechanics hold either an aircraft or an engine mechanic's certificate, or both.

Mr. DOLLIVER. The civilian airlines, as well as the defense agencies, have a very great interest in training personnel. It is perfectly obvious. I am wondering if your association, the Air Transport Association, is doing anything on its own to fill the impending vacuum in these categories of trainees.

Do you have any programs of your own for developing A and E mechanics and pilots?

Mr. TIPTON. Mr. Joseph O'Brien, the head of the Airlines Personnel Conference, which is the industry group specializing in personnel problems, is here, and I would like to have him comment on that particular point.

STATEMENT OF JOSEPH L. O'BRIEN, AIRLINE PERSONNEL RELATIONS CONFERENCE

Mr. O'BRIEN. There are two phases to any training program; one, an approved apprenticeship training program by the Bureau of Apprenticeship of the Department of Labor, and an on-the-job training program. All of the carriers by the very nature of their work are obligated to conduct constant on-the-job training programs due to the many technological advances constantly occurring.

The number of airlines that have approved apprenticeship training programs are rather few.

Mr. DOLLIVER. Approved by whom?

Mr. O'BRIEN. The Bureau of Apprenticeship of the Department of Labor, but just in danger of repetition, I might say this training problem is one that is constant and of necessity because of the nature of our business, both insofar as ground crews and flight crews are concerned.

Mr. DOLLIVER. Are you able to say why so few of these training programs in industry are approved by the Department of Labor? Is there any particular reason for that?

Mr. O'BRIEN. Yes, I think so. During World War II many of the major air carriers had approved apprenticeship training programs. Quite obviously, with the number of skilled personnel who were available at the conclusion of the war, that was not considered necessary or essential, so in many instances those programs were discontinued. In addition, we feel that for our particular purposes, at least up to the present time and perhaps during the present time, the training programs that we set up within our organizations are adequate to meet the needs, and have been.

Mr. DOLLIVER. Is it fair to say there have been no planes grounded, or no interference with the operations because of the lack of trained personnel up to now?

Mr. O'BRIEN. Yes, I think that is a fair observation.

I would say, as Mr. Tipton has indicated, we are very definitely reaching the bottom of the barrel.

Mr. DOLLIVER. I understand that you are scrounging, as it were for qualified personnel in the field.

Of course, the Air Transport Association, Mr. Tipton, and you, Mr. O'Brien, representing the Personnel Division, are very conscious of the problem and want to do anything that you can to alleviate it?

Mr. O'BRIEN. Yes.

Mr. DOLLIVER. Do you expect to continue to take steps in your own training programs through the various airlines?

Mr. O'BRIEN. Very much so.

Mr. DOLLIVER. You anticipate, do you, there will be any endeavor on the part of the various airlines to secure approval of the apprentice training programs in the immediate future?

Mr. O'BRIEN. Yes, I think undoubtedly that will be done.

Mr. DOLLIVER. Are some activities under way in that direction at the present time?

Mr. O'BRIEN. Yes; I think that is the case.

Mr. DOLLIVER. Are you able to estimate the number of men that are going through training at the present time in the various airlines in the category of A and E; aircraft and engines?

Mr. O'BRIEN. Yes. That is, it is difficult to answer the question in terms of exact numbers, but we can say this, that as new equipment is added, the training that is going on is intensive and constant. For example, so far as the mechanics are concerned, training manuals; manuals of operation, are provided, and there is an obligation imposed upon each mechanic to familiarize himself with the changes that have occurred and he is required to initial statements to the effect that he has familiarized himself, and he is checked out by supervisors, to make sure he understands thoroughly and completely any changes in the engine, airplane, and any other engineering changes in the equipment.

So that I think it is safe to say better than half of our present mechanical personnel are constantly undergoing training. The other groups are those who are engaged in line production work, repetitive operations in the overhaul shops, and unquestionably approximately half of them are undergoing training.

Mr. DOLLIVER. I must say, Mr. O'Brien, my observation has been that the airlines are pretty well equipped. I have had occasion to make this observation on a recent plane trip. The pilot declined to take the plane off of the ground because one of the motors connected with the reverse prop would not operate properly and all of the crew and passengers, as well as others were on the plane when that announcement was made. I was sitting right next to the window where the replacement was made, virtually under my eyes. There were three or four mechanics there and the operation was done within a half an hour, and we took off.

That is, of course, a very minor observation, but perhaps in the background of the questions I asked as to whether there had been any planes grounded or any curtailment of operations, because of lack of aircraft and engineering mechanics.

Now, let me ask one other question. I think it will be of interest in the record if you will explain to us how a young man would go into one of the shops, perhaps Chicago or Denver, or Los Angeles or Miami. Could he get a job there?

Mr. O'BRIEN. Yes. Well, assuming that we take the situation as it exists currently. Obviously, the number of available young men who have had prior training in aviation, in mechanics, are becoming fewer and fewer, because of the demands, in manufacturing as well as our own field, where we have increased our total personnel during the past year from eighty to one hundred thousand, which percentage-wise is a substantial increase. So, we are rapidly coming to the point now where we are taking men without skill or men who have had experience as automobile mechanics, and for the most part these men start in as mechanics' helpers, or so-called apprentices, and I use that term "apprentice" in the broadest sense, and not necessarily in the sense of approved apprentice training courses, or even as mechanics in certain instances. They would be started in in the engine overhaul shop or airplane overhaul shop where they would be assigned to work under skilled journeymen with some years of experience and after they had satisfactorily completed this particular phase of the work, which, for example, might be on cylinders, they could be rotated from one shop to another.

By the end of a 4- or 5-year period, they would have accumulated a wide knowledge of the entire operations and then in certain instances would be assigned to line maintenance crews, to help perform the No. 1, No. 2, No. 3, or No. 4 checks on aircraft. In other cases, however, if their interest was not sufficiently broad they might continue to stay in the overhaul shop where the work is of a repetitive nature and hence become specialists in one particular line of endeavor.

Mr. DOLLIVER. Now, all of the time, of course, they are being paid the regular union scale of wages?

Mr. O'BRIEN. Yes, sir.

Mr. DOLLIVER. For the kind of work they are doing?

Mr. O'BRIEN. Yes, sir.

Mr. DOLLIVER. And as their skills improve, their compensation is increased?

Mr. O'BRIEN. Yes, sir.

Mr. DOLLIVER. Now, does that same general picture obtain in the electronics field also?

Mr. O'BRIEN. Yes, sir; it does. Of course their work is not as broad in scope as you would find with the men who are working on both the aircraft and the airplane, because these lads would be assigned to the instrument shops in the electric or electronic shops, and would become specialists in that particular field.

Mr. DOLLIVER. Of course, the wear and tear on electronic equipment is not nearly as severe as on the engine and planes, perhaps.

Mr. O'BRIEN. Yes, but on the other hand, the complexity of the electronic system on the modern airplane is constantly increasing and they do comprise at the present time one of the most important segments of our maintenance force. As a matter of fact I think it is safe to say there are more delays, and it causes us greater concern, than perhaps any other factor in the business today.

Mr. DOLLIVER. Now, when a new type plane is put into operation, before the transport company will start using that regularly, is it necessary for them to have an entire crew clear throughout the operation in order to assure its continuous use?

Mr. O'BRIEN. Yes, sir. And there are two ways—I will amplify that, if you are interested.

Mr. DOLLIVER. I would be glad to hear it.

Mr. O'BRIEN. In most cases the size of a crew assigned to the factory manufacturing the aircraft depends upon the number of aircraft on delivery.

Mr. DOLLIVER. Before delivery?

Mr. O'BRIEN. Yes, sir; and they will receive an intensive course in training in the proper maintenance of that aircraft.

Mr. DOLLIVER. Is their compensation paid by the transport company?

Mr. O'BRIEN. Yes, they are on the payroll of the company itself.

And then in addition, factory representatives are assigned to the various properties, who are directed to supervise and train the individuals who are responsible for the maintenance of those aircraft, so that one of the most expensive features in the acquisition of new airplanes is the training factor, both of the flight crews and the ground crews.

Mr. DOLLIVER. But, of course, the fact is that the various transport companies already have in operation the training systems of their own to meet their own needs?

Mr. O'BRIEN. We are obligated to do so, sir, for two reasons: No. 1, by the regulations of the Civil Aeronautics Administration; No. 2, in order to stay in business, it is absolutely essential.

Mr. DOLLIVER. As a matter of operations, you have to do that kind of thing?

Mr. O'BRIEN. Yes.

Mr. DOLLIVER. I think that is all, Mr. Chairman. Than you.

Mr. MACK. Mr. Chairman——

Mr. BECKWORTH. Mr. Mack.

Mr. MACK. Mr. O'Brien, I was not quite clear on this apprentice program which you mentioned. You say that part of it is accredited or certified. Does that lead to certification of mechanics or——

Mr. O'BRIEN (interposing). No, sir; it has no relationship. In order to qualify for an A. and E. license, a man must pass a theoretical and practical examination, after having completed, I believe, 2 years within a particular line of activity. For example, a young man comes into the business without any prior experience. He is on his own and, with the assistance of the supervisors, he can study the trade necessary to qualify, and then he is given tests by the CAA inspector to determine his qualifications on the job.

Consequently, it is not necessary to have an approved apprenticeship-training program to qualify a man for an A. and E.

Mr. MACK. What are the qualifications for the job?

Mr. O'BRIEN. What are the qualifications?

Mr. MACK. Yes; I mean, he does not have to take an examination. There is no examination to take; is there?

Mr. O'BRIEN. You mean for employment?

Mr. MACK. No. You said that after they finish their apprenticeship——

Mr. O'BRIEN. Yes, sir.

Mr. MACK. They have to take some type of a test or be approved for the job they are on.

Mr. O'BRIEN. Oh, I see. Now, you mean for the job within the company?

Mr. MACK. Yes.

Mr. O'BRIEN. That is correct; and the practice varies. In certain instances a formal written examination is given before a man can qualify for a mechanic. In others, while an examination is given, it does not have the same formal aspect that it does in other cases; but there is a definite check-out, to make sure that the man is qualified to perform the operation to which he is assigned.

Mr. MACK. Well, how about the apprentices that are not approved by the apprentice-training program?

Mr. O'BRIEN. Well, so far as those men are concerned, they do become qualified. There is not any relationship between the fact that a man has been registered with the Bureau of Apprenticeship, Department of Labor, and a man's qualification for an A. and E.

Mr. MACK. Then, the apprentice program is more of a training program to make them more useful on the job.

Mr. O'BRIEN. Yes, sir.

Mr. MACK. And it is not designed to give them an A. and E. background or to qualify them as A. and E. mechanics.

Mr. O'BRIEN. That does not necessarily follow. We think that it is beneficial in the best interests of our industry, and the best interest of our industry is served if men do have an aircraft and engineering license. However, as you can understand in certain repetitive operations, it is not an absolute prerequisite, but it is desirable, under every circumstance, if for no other reason than as an indication to us that a young man is interested professionally in his job. But, the program is not designed to create them or to certify them as an A. and E. Certain programs are, and others are not.

When a man is assigned to line maintenance, he cannot carry out his responsibility without having an A. and E. When a man is assigned to an overhaul shop, he may or may not. It depends upon the circumstances.

Mr. MACK. Then, let me put it this way: You can qualify them under the apprentice program for an A. and E. license.

Mr. O'BRIEN. Yes, sir.

Mr. MACK. That is all.

Mr. HINSHAW. Mr. Chairman.

Mr. BECKWORTH. Mr. Hinshaw.

Mr. HINSHAW. I would like to ask Mr. O'Brien if he knows how many apprentices actually achieve either aircraft or engine or A. and E. licenses through training programs in the airline industry.

Mr. O'BRIEN. Well, I think it is safe to say that practically all of our young men who have that objective in mind accomplish it or leave the business.

Mr. HINSHAW. Well, that of course is a rather broad statement, because you have to find out how many of them have it in mind.

Mr. O'BRIEN. Well, all right. Let us put the question this way: There is a line of demarcation within the maintenance organizations between the men who are assigned to overhaul work and the men who are assigned to what we call line maintenance, and so in certain instances a man will choose to stay in an overhaul department rather than get into the line maintenance work. One reason might be that the work in the overhaul department is for the most part conducted during the day. In line maintenance they have rotating shifts. Line maintenance is the work that is performed on No. 1, No. 2, and

No. 3 checks to determine air worthiness, and to make minor repairs, in order to prepare the aircraft for routine service.

Mr. HINSHAW. You say No. 1, No. 2, and No. 3 checks. You are talking about the 25-, 50-, and 100-hour checks?

Mr. O'BRIEN. Yes, sir.

Mr. HINSHAW. Do you know how many A. and E. licenses have been granted to persons who have come through the airline shops, maintenance departments, as apprentices in any given year?

Mr. O'BRIEN. No; not in terms of exact numbers, I do not.

Mr. HINSHAW. Can you estimate it?

Mr. O'BRIEN. Oh, I would say in a normal year there would be 1,500 or 2,000.

Mr. HINSHAW. Would it be either engine or aircraft, or both licenses?

Mr. O'BRIEN. Both; yes, sir.

Mr. HINSHAW. How long, ordinarily, does it take for a man to acquire a full A. and E. ticket?

Mr. O'BRIEN. Four years, without prior experience.

Mr. HINSHAW. Not long ago the civil air regulations required that flight engineers be placed in the cockpits of certain 4-engine aircraft—I believe D–6's, Constellations, and of course the Boeing 377's. Where were those men acquired? Were they from the shops, the maintenance crews, or what?

Mr. O'BRIEN. From two sources: One, from the shops, the maintenance crews; and, the other, from copilots who had received intensive training programs, once again, given by the company, to qualify them as flight engineers.

Mr. HINSHAW. As to that, is a flight engineer potentially a copilot or vice versa; or what?

Mr. O'BRIEN. In certain instances, particularly insofar as the DC–6 operations is concerned, the flight engineer is a potential copilot. In the case of the Boeings, the Lockheeds, he is a flight engineer, period.

Mr. HINSHAW. Why is that?

Mr. O'BRIEN. Because in one instance he is a mechanic who has been brought up from the ranks, and in the others the companies have considered it advisable to have them as third officers or copilots.

In addition, in the Lockheed and the Boeing there is a flight-engineer station. In the DC–6's that is not the case. And there is the reason for the different types.

Mr. HINSHAW. Do you know how many flight-engineers are now employed by the certificated air carriers?

Mr. TIPTON. Approximately 1,600, Mr. Hinshaw.

Mr. HALE. Approximately how many?

Mr. TIPTON. Approximately 1,600.

Mr. HINSHAW. And what is the salary that they work under; how much do they make in a year?

Mr. O'BRIEN. I do not have those figures. However, I believe it is a top rate of $600 to $700.

Mr. HINSHAW. Per month?

Mr. O'BRIEN. Yes, sir.

Mr. HINSHAW. That is $7,200 to $8,400 a year?

Mr. O'BRIEN. Yes, sir. I would like to check those figures, however. That is an approximation.

Mr. HINSHAW. Now, I would like to ask either one or the other of you, how we cannot only acquire this additional personnel that might be needed for M-day; but how we can keep them interested and thoroughly familiar with aircraft maintenance and operations in the meantime? Or, is that too big a question?

Mr. TIPTON. That is an awfully hard question, Mr. Hinshaw.

If it is clear that if we are suddenly required, as we would be required in mobilization, to increase our utilization by 25 or 30 percent, we are going to need more personnel, no matter how many airplanes are in the fleet at that time. They are going to need more personnel to do that than we would normally have on the job and thus we would hope to be able to look to a pool of trained personnel that might be created under this legislation.

Now the question you raised is, when you look to that pool, are you going to find them at that time in position to take over and do their work or are you going to find them having finished the school 2 or 3 years before and not available today?

Mr. HINSHAW. They may be employed elsewhere.

Mr. TIPTON. That is right. I do not know of any way that you can—maybe I should know, but I do not know of any way you can keep them right up to snuff constantly after they have finished their training.

There are many ways by which that might be done, but none that will assure it, that occurs to me.

The training, even assuming, however, that the man has been trained under this legislation and has gone into other work thereafter, nevertheless, he has had this basic training and it will take a much shorter time—probably no time—to bring him up to date and to make him a useful mechanic or pilot or other class of personnel, than it would if you had to hire him from a group that had received no training at all.

Mr. HINSHAW. It is my understanding that corporate owners of aircraft own aircraft in very large numbers. Is that correct?

Mr. TIPTON. Yes; there is a large number of corporate-owned aircraft of various sizes.

Mr. HINSHAW. I believe the last figure I heard—whether it is correct or not I do not know—is something on the order of nine or ten thousand such aircraft.

Mr. TIPTON. Corporate-owned aircraft; nine or ten thousand?

Mr. HINSHAW. Yes.

Mr. TIPTON. That is higher than I thought it was. I was thinking in terms of a thousand, though I do not have any firm figure right at hand on that.

Mr. HINSHAW. Well, there is a book——

Mr. TIPTON. I am assured that your figure is correct.

Mr. HINSHAW. There is a book which is published by the Corporation Aircraft Owners' Association, or whatever it is called, which lists a very large number of them and I was informed that the number ran close to nine or ten thousand total.

Obviously these aircraft which can be flown and maintained, their number is very large and I would assume that the so-called fixed base operators did the most of the maintenance work on these airplanes, and that the pilots were "company pilots."

Mr. TIPTON. Yes; that is my understanding.

Mr. HINSHAW. In all events, there is a very large number of them and a very large field for the utilization of both mechanics and pilots in the corporation aircraft field, as well as, of course, the maintenance of privately owned aircraft. So that if that field be then added to the air-carrier field, there must be a very large employment of aircraft and engine mechanics, as well as pilots.

I would be interested in finding out what the totals are, if they can be found out either from the Civil Aeronautics Administration or such other sources as may have such figures.

Mr. TIPTON. It is my understanding that that will be covered by testimony by the Civil Aeronautics Administration.

Mr. HINSHAW. So that there is a place for a considerable number of new A. and E. mechanics every year and a reservoir in that field, if nowhere else, which doubtless could be called upon in times of emergency to supply the additional mechanics and other crew members that are required.

I hope that when the Civil Aeronautics Administration testifies they can give us some idea as to the pool that can be available and in what fields, prior to the time of mobilization, and what the probabilities are that that pool will be made available through perhaps the—well, let us say, limitation as to the use of aircraft fuel or some other means of limiting the use of nonessential aircraft, rather than those that are considered to be essential to the needs and welfare of the public.

One other thing: I have understood that in the course of recent mobilization that the numbers of pilot personnel that have been called to active duty in the Armed Forces by the military has caused a shortage to the air carriers of pilots; is that correct?

Mr. TIPTON. I think probably Mr. O'Brien can answer that better than I can.

Mr. O'BRIEN. Yes; there is no question about it having an effect on the total number available. However, we must say the records indicate that in terms of numbers called they have not been too great.

What causes us most concern, as Mr. Tipton pointed out, is the uncertainty that currently exists because of the large percentage that have a reserve status.

Mr. HINSHAW. My understanding also—and I have figures to prove this point—figures that were handed to me sometime ago—that the original qualifications for the hiring of copilots has been reduced by certain air carriers in order to obtain the necessary personnel. Is that correct?

Mr. O'BRIEN. Yes, sir.

Mr. HINSHAW. Can you give any figures on that?

Mr. O'BRIEN. Yes. In the period immediately following the war, 1,500 to 2,000 hours of flight experience, most of which was on multiple-engine or twin-engine equipment, was considered essential.

Mr. HINSHAW. Is that for the hiring of copilots?

Mr. O'BRIEN. Yes, sir. At the present time, because of the shortage of copilots it has been reduced to between 800 and 1,000 hours. I think the industry average, among the major certificated trunk carriers is 804, to be exact. We had occasion to make a check on that recently.

Mr. HINSHAW. I believe those are the figures that I have.

Mr. O'BRIEN. Yes, sir.

Mr. HINSHAW. And that the total shortage of top-grade pilots at the present time is something in the order of 450.

Mr. O'BRIEN. Yes, sir.

Mr. HINSHAW. Has there been any relaxation of the requirement of copilots, that a copilot should carry a transport license or must he only have a commercial license at the present time to be hired?

Mr. O'BRIEN. There has been some relaxation in certain quarters insofar as that is concerned.

Mr. HINSHAW. They must have a commercial license before they can apply for copilot, must they not?

Mr. O'BRIEN. Yes, sir.

Mr. HINSHAW. And you have to carry on the training to provide them with the transport category license?

Mr. TIPTON. I believe that the copilot can—you can use a copilot who has a commercial license with instrument rating, but the training to make a good line pilot out of him, of course, is the same, no matter what kind of a license he has when he is hired.

Mr. HINSHAW. That is all, Mr. Chairman.

Mr. MACK. Mr. Chairman.

Mr. BECKWORTH. Mr. Mack.

Mr. MACK. I just have one other question. Mr. Tipton, do you have any figures to indicate the percentage of men working with the airlines today who received the r original training through the civilian pilot-training program?

Mr. O'BRIEN. No. We can give you approximately—prior to World War II, a substantial, very substantial percentage of men received their training through civilian pilot-training programs; but obviously since World War II, the bulk of them, a substantial percentage, have been military-trained.

Mr. MACK. Of course many came to the airlines afterward, after World War II, having received their original training from civilian pilot-training programs.

Mr. O'BRIEN. Yes, sir; that is correct.

Mr. TIPTON. The number, Mr. Mack, must be very substantial, because, as Mr. O'Brien pointed out, we employed a great number of them prior to World War II and then certainly a high percentage of the pilots that were employed after the war had had civil pilot training as a preliminary to their military training.

Mr. MACK. I think we would agree there would have been a very serious shortage, a critical shortage of pilots for the airlines prior to World War II, if it had not been for the civilian pilot-training program.

Mr. O'BRIEN. Yes, sir.

Mr. MACK. That is all, Mr. Chairman.

Mr. BECKWORTH. Any further questions?

Mr. HALE. Mr. Chairman.

Mr. BECKWORTH. Mr. Hale.

Mr. HALE. Mr. Tipton, on page 3 of your statement, next to the last paragraph, you say in the last sentence, "21.5 crew members for mobilization operations, 16.5 of whom are skilled personnel."

By implication that means five are unskilled.

Mr. TIPTON. They are stewards or stewardesses.

Mr. HALE. That is what?

Mr. TIPTON. That is the unskilled part of the crew; that is what is referred to there.

Mr. HALE. Mechanically unskilled?

Mr. TIPTON. That is right. That term probably should not be used, that term "unskilled," with respect to that class of personnel, because they are pretty skillful in their line. They are just not mechanically trained.

Mr. HALE. That is what fooled me. I would think that anybody anywhere near an airplane would not have any right to be there if they were unskilled. That is all, Mr. Chairman.

Mr. BECKWORTH. Any further questions?

Thank you very much, Mr. Tipton.

Mr. TIPTON. Thank you, Mr. Chairman and gentlemen of the committee.

STATEMENT OF MR. WILLIAM F. PATTERSON, DIRECTOR, BUREAU OF APPRENTICESHIP, UNITED STATES DEPARTMENT OF LABOR, WASHINGTON, D. C.

Mr. BECKWORTH. The next witness we shall have will be Mr. William F. Patterson, Director, Bureau of Apprenticeship, Department of Labor. Mr. Patterson.

Mr. PATTERSON. Mr. Chairman and members of the committee, my name is William F. Patterson. I am Director of the Bureau of Apprenticeship, United States Department of Labor.

I wish to thank the committee for the opportunity to present the views of the Department of Labor on H. R. 7073 and H. R. 7074, relating to the training of civilian aviation personnel. Both the Secretary of Labor and I have always thought it important to provide your people with the skills and techniques they will need for their future responsibilities. The skills they acquire will not only be helpful to themselves but will also provide a trained reservoir of necessary technicians for the country during periods of national emergency.

At the outset, I wish to point out that in addition to the civilian aviation industry, there are other industries which are short of skilled workers. The Department of Labor prepares a current list of those skills which are in shortest supply. There are 61 occupations, including both professional and manual, on the list.

Training for 29 of these occupations is customarily carried on through apprentice training. All of them are essential to industries which must expand in an all-out mobilization period. The long-range remedy to this problem of having a shortage of skilled workers is to train more people in these various skills. At present, for example, we need more engineers and physicists. These can only be given training in the colleges. We also need more apprentice tool and die makers, and airline mechanics who receive their training by apprenticeship in our factories and workshops throughout the country. These properly trained people will be the reserves on whom we can count in any emergency.

The present defense mobilization program is based on the assumption that training of all kinds, scientific, technical, and engineering, must continue over a long period of time. This was stated in Defense Manpower Policy No. 5, issued on March 31, 1952, by the Director of Defense Mobilization. This policy statement, which sets forth the policy on defense training, emphasizes that if there is to be an immediate attack on the present and increasingly more difficult problem

of skill shortages, present training programs must be intensified at this time, and this increased training must be done in major degree by industry, using its own and other normal training resources. The Bureau of Apprenticeship of the Department of Labor stands ready to help the civilian aviation industry and the other defense industries to further increase their training programs. Apprentice training is carried out by industry with the advice and cooperation of the Bureau.

The two proposals before this committee relate to the training of civilian aviation personnel. They would provide Federal assistance in the training of aircraft and engine mechanics, aviation instrument and electronic technicians, pilots, and other flight and ground personnel.

The bills state that their purpose is to establish and maintain a body of trained manpower to meet the defense mobilization requirements of the United States. I believe that these aims can be achieved in large part in the aviation industry, as well as in other defense industries, through apprenticeship programs with respect to apprenticeship skills and through other training provided by industry and the armed services.

In 1948 it was reported by the President's Air Policy Commission that a 15-year availability of World War II pilots existed for instructor, patrol, and transport duties. Yet 3 years later the Department of Labor's critical occupation list showed there was a shortage of commercial airline pilots. This is a practical illustration of the fact that skills cannot be stockpiled for future use as can rubber or copper or other material things. If a worker cannot obtail employment in an occupation for which he is trained, he must take employment in some other field.

While the training of pilots and navigators does not lend itself to apprenticeship methods, the military services are training large numbers in these fields, and they are fully qualified, subject to necessary licensing, for commercial employment. It is likely that the present shortage of commercial pilots and navigators will disappear as the Armed Forces release many having those skills.

The present shortage of pilots has been matched by an even greater shortage of skilled aviation mechanics and maintenance men. Again, there existed a surplus after the last war but it was quickly dissipated by having these skilled men turn to other occupations when they could not obtain employment in the aviation industry. However, the present shortage in these occupations could very easily turn into a highly critical shortage in an all-out mobilization period.

Mechanics and maintenance men are the backbone of the aviation industry. In a very real sense, they keep the planes flying. They are trained by apprenticeship methods. Therefore, I would like to discuss the training of mechanical personnel.

The Bureau of Apprenticeship has a clear responsibility under Public Law 308, Seventy-fifth Congress, to provide the training of an adequately skilled labor force. We are doing this by bringing together employers and employees so that they may arrive at the terms and conditions under which the employment of apprentices shall take place. As a significant product of this activity, the Bureau of Apprenticeship is developing a national inventory of apprentices with the objective of being able to provide information to the Congress, the executive branch of the Government, and to industry and labor

on the extent to which apprentice training is actually maintaining essential skills.

As I have said, apprentice training is an appropriate method for the training of airline mechanics. It does not follow, however, that all the various kinds of mechanical employees hired by the airlines need the broad comprehensive training contemplated by apprenticeship. These other jobs can be learned in a relatively short period of time, but the all-around skilled mechanics turned out under apprenticeship methods are the workers needed to quickly train many others for jobs requiring less skill and knowledge.

Out of approximately 14,700 maintenance employees on all the scheduled airlines, there are only 171 apprentices now registered with the Bureau of Apprenticeship and in training. This is a ratio of 1 to 85.

The Air Force, on the other hand, has 1,224 apprentices in training, out of 13,000 maintenance employees, a ratio of 1 to 10.6. We believe these figures are significant because the Air Force has come to recognize it must have a group of all-round skilled workers which it can use as a nucleus for expansion. The airlines, although pioneers in the apprenticeship training in these skills, kave practically abandoned over-all training in favor of breaking jobs down to more limited skills. This method may be effective for immediate operations, but it will not provide a cadre of skilled workers upon which a rapid expansion can be used.

The record of one airline, which has maintained a sound apprentice-training program since 1942, will illustrate the importance of apprentice-trained men to an expanding industry. This company has completed the training of 438 apprentices since 1942. Of this number, 2 men are now assistant superintendents, 1 is superintendent of buildings and grounds, 2 are crew chiefs, 4 are assistant crew chiefs, 16 are inspectors, and many of the remainder are senior mechanics. This company has the needed reserve of knowledge and skills for further and rapid expansion.

It is our recommendation, therefore, that the number of apprentices in training be increased many fold. There are striking advantages in this approach. First, there would not be any need for establishing new types of training programs, at least not for the apprenticeable occupations. And certainly one of the most critical shortages in the civilian aviation field exists in the apprenticeable occupations—namely the various kinds of airplane mechanics and repairmen.

Secondly, the airline companies would reap immediate benefits since apprentice trainees start producing while they are learning. In the long range, these companies will profit by having all-around skilled mechanics able to perform, not one, but many different kinds of jobs requiring skill and judgment.

Thirdly, the trainees would benefit since they would learn useful trades and their earnings will increase with their proficiency. Thus both the employer and the trainee would profit from having the job training take place in the employer's shop, supplemented by classroom work. The trainee would become acquainted with the employer's facilities and way of doing things while the employer would not have the risk of employing a mechanic or group of mechanics who may or may not be fully trained, and who may not "work out" in his shop.

Finally, the country at large would benefit by having these skills fully developed since as I have previously pointed out, such men can serve as instructors and trainers in any period of rapid expansion.

Perhaps the greatest public advantage in furthering the apprenticeship method in the civil aviation industry is that it will not result in a heavy expenditure of Federal funds.

Where the same or better results can be accomplished without a great expenditure of Federal funds, serious consideration should be given to that method. Apprenticeship training has proved it can produce results. It will not cost the taxpayer millions of additional dollars to further increase apprenticeship programs in the civil aviation industry.

In line with the expansion of the apprenticeship program in the aviation industry, the Department of Labor strongly advocates a deferment policy for apprentices. As an aid in building up our stock of knowledge and skills, we have a deferment policy for college students. The same policy should prevail for apprentices. A deferment policy which would permit apprentices to complete their training would provide civilian employers with a sound and effective reserve of knowledge and skills. It is not proposed that such a policy should in any sense be considered an exemption from service. In fact, by allowing apprentices to finish their apprenticeships, the Armed Forces may find that in many instances they will be inducting skilled workers available immediately for skilled positions.

There are other considerations which I should like to bring to the committee's attention.

The Bureau of Apprenticeship was advised by some of the airlines shortly after the war that they did not consider it wise to start apprentice training because of the large number of trained aircraft maintenance workers. In a period of 7 years this source appears to have dried up. Again, this is a clear indication that skilled men do not remain available unless they have an opportunity to continue working at their trades. A continuing apprenticeship program would help remedy this situation by supplying a constant source of highly skilled men who would be available at all times and ready to aid in any quick expansion in an emergency period.

More than 700,000 men have been released from the military forces since the beginning of the Korean war. Soon it can be expected that the number coming out of the Armed Forces will equal the intake. Some of those discharged will have experience immediately usable to the airlines. Others will want to take a course of apprentice or other on-the-job training in aircraft work under the proposed Korean Veterans Readjustment Act. Thus it can be expected that more skilled applicants will be made available to the civilian aviation industry.

The Department of Labor doubts the wisdom of any program under which money is appropriated for training in specific industries only. I believe that any sums appropriated for that purpose should be administered by one agency and made available for all industries having a need for such training.

In conclusion, I should like to emphasize that there is a definite need for a greatly expanded training program for all-round skills in the air-transport industry and all allied activities. This is a dynamic industry and it must prepare for as many swift changes in the future

as have occurred in the past. If the industry, including labor and interested governmental agencies, will get solidly behind the kind of training program I have outlined, I am confident we can meet any emergency which may arise.

I thank you.

Mr. DOLLIVER. Mr. Chairman.

Mr. BECKWORTH. Mr, Dolliver.

Mr. DOLLIVER. Mr. Patterson, there are two lines of inquiry I would like to make. The first is this: It seems to me I remember that in the inception of the apprentice-training program in the Department of Labor there was some difficulty in securing reasonable adjustments and arrangements with some of the unions who were involved. Have those difficulties been ironed out at the present time?

Mr. PATTERSON. Yes; they have, and your statement is correct that in the beginning, when we first started in 1934, and later when the law was passed in 1937, there was some question of getting an understanding on the part of the unions; but I must say that that has been adjusted; that they are very vigorous in their promotional activities, and their sanctions of it, and are cooperating in any way that is necessary to make the program go.

Mr. DOLLIVER. Now, specifically, is there any difficulty in our program with respect to any of the industries or with respect to any interest of the labor unions that are involved in the airplane industry?

Mr. PATTERSON. No, sir; there is not.

Mr. DOLLIVER. You would be able to say then that if your program were expanded in the airplane industry you would not anticipate any opposition from that source?

Mr. PATTERSON. I think you have a more favorable climate in the aviation industry or the repair, mechanical repair end, than you would have in some other industries.

Mr. DOLLIVER. Now, assume for the purpose of this question, this matter comes that one of the large airlines that does not now have the benefit of the apprentice training service. This company decided that they want to take advantage of the program. Would you describe to the committee what they might secure by way of your services, and what advantage it would be to them to utilize the facilities of the apprentice training program?

Mr. PATTERSON. Well, we have a small staff; but well qualified to provide technical, advisory assistance to these companies in setting up programs, and I can take for example the company that I used as an illustration, that back in 1942 they came to us and said that they wanted to set up a program, and wanted a field man to work with them.

Mr. DOLLIVER. That was an aviation company?

Mr. PATTERSON. That was an airline carrier; the one I used as an illustration. They came to us and asked for our field representative to work with them in setting up a program.

Now, obviously, they know a lot about training themselves, but they wanted the advantage of our program.

There are 161,000 companies in the country that have programs with us and they get the advantage of the best practices. Our field men are familiar with that.

Later, when the company employees were organized, there was created a joint apprenticeship committee representing the company and the union, composed of five from management, and five from the union, to give further impetus to the program. I recall going through their shops in 1943, and they only had 43 apprentices. Now, I notice that they have 134, so they found it worth while, and all along they have tried to incorporate the most improved practices as to apprentice training and keep it as modern as the industry is itself.

Mr. DOLLIVER. Now, in connection with your program, there is no money provided to any of these companies to set up a program?

Mr. PATTERSON. No; the companies pay the wages of the apprentices, and I think it is significant that the apprentices during their period of apprenticeship earn a great amount of money. We have had a check made of two of the largest airline companies. The average apprentice had earned himself $11,000 during his period of apprenticeship, during the 4 years' period.

Mr. DOLLIVER. During the 4-year period?

Mr. PATTERSON. Yes.

Mr. DOLLIVER. There is no subsidy involved, is there?

Mr. PATTERSON. No; the cost to the Government is in our appropriations from Congress, which are relatively small, for field representatives, and then the Government through grants in aid does provide money to vocational schools for related instruction. So, there is that fund, grants in aids, Federal grants matched by the States, and locally, which provides for that. That would be the only case where some Federal money is used.

Mr. DOLLIVER. Would you give an illustration of that kind of subsidy we will pay, in the airplane program?

Mr. PATTERSON. Well, an apprentice normally works 40 hours a week, sir, and he is required to go a minimum of 4 hours a week to school, to a school to get related technical and supplemental instructions that he cannot get on the job. They all do that. Some companies send them 8 hours, because they find that it is advantageous. Ordinarily that is on the apprentice's own time, although a few companies do it on the company time, and again, a few of the airline companies see fit to provide related instruction themselves, right in their own plants, at their own expense.

Mr. DOLLIVER. Normally that would be some kind of a technical high school?

Mr. PATTERSON. A vocational school.

Mr. DOLLIVER. A technical school of some kind either publicly or privately operated?

Mr. PATTERSON. Generally publicly operated. If the institution is available it is almost always public.

Mr. DOLLIVER. That particular vocational training is subsidized to a degree by the Federal vocational training money?

Mr. PATTERSON. Yes.

Mr. DOLLIVER. That is the only place there is any subsidy?

Mr. PATTERSON. Yes; it is.

Mr. DOLLIVER. Or where there is any subsidy involved in the apprenticeship training.

Mr. PATTERSON. Well, I would be remiss if I did not say the GI bill of rights, of course, provides subsistence for GI apprentices, but that is almost a thing of the past.

Mr. DOLLIVER. Practically expired, but may come into being in connection with the Korean veterans in this session of Congress.

Mr. PATTERSON. That is true.

Mr. DOLLIVER. I think that is all, Mr. Chairman. Thank you.

Mr. HALE. Mr. Chairman.

Mr. BECKWORTH. Mr. Hale.

Mr. HALE. Mr. Patterson, do I infer from your statement you think these bills are unnecessary or necessary?

Mr. PATTERSON. I think your inference is correct, Mr. Hale. We feel that if the airline companies, together with the unions, got together on a full apprentice training program, as many other industries have, that the need could be met.

Mr. DOLLIVER. Will the gentleman yield?

Mr. HALE. I will yield.

Mr. DOLLIVER. Would you name one of the industries which is in this program in a full-fledged way?

Mr. PATTERSON. The construction industry. At the end of World War II, the construction industry had a bare 5,000 apprentices, and they raised it up to 125,000 to meet the veterans' housing emergency, so that they could have skilled manpower, and it was entirely through the cooperation of the national construction industry, contractors' organizations, and building trades unions, and then on a local basis the same way.

Mr. HALE. Thank you.

Mr. DENNY. Mr. Chairman.

Mr. BECKWORTH. Mr. Denny.

Mr. DENNY. I believe, Mr. Patterson, your bureau has done a splendid job in securing cooperation of the unions on this very subject, but even as late as 1945 they were very dubious about it.

Mr. PATTERSON. That is correct.

Mr. DENNY. And very reluctant to take on these on-the-job training apprentices.

Mr. PATTERSON. Yes, sir.

Mr. DENNY. Now, I have felt all along, just as Mr. Hale said, that there was some question as to whether you could not handle this job perfectly well without these schools, and there are so many technical schools now in existence to teach not only one thing, but to give a real education to the men at the same time, which I believe is just as important as teaching them one particular skill, so that I am wondering whether this bill is the necessary thing under your program.

Mr. PATTERSON. Of course, my position, Mr, Congressman, my statement is largely to point out the benefits or advantages of apprenticeship training and we feel that it can meet the needs under existing circumstances.

Mr. DENNY. That is all, Mr. Chairman.

Mr. MACK. Mr. Chairman.

Mr. BECKWORTH. Mr. Mack.

Mr. MACK. Mr. Patterson, are you inferring that the apprentice training program is preferable to training in an A. and E. mechanic's school, for instance?

Mr. PATTERSON. Yes; I would think so, because every apprentice trained as a mechanic could meet the minimum requirements of an A. and E. license, having had four full years of all around training.

Mr. MACK. It was not my understanding that after a certain period of time an A. and E. apprentice would end up with an A. and E. license?

Mr. PATTERSON. Well, as one of the previous witnesses indicated, the objective of an apprentice training program is not necessarily an A. and E. license, but to provide an all around aircraft mechanic that can handle any job.

Mr. MACK. I think most of us agree that if a man has an A. and E. license, he would be an all-around mechanic, or if he were an all-around mechanic, aircraft or engine mechanic, that he should qualify for an A. and E. license, if the examinations given are not unreasonable. It seems to me that after successfully completing their course, they should qualify for an A. and E. license. So, I think we can use that as a yardstick.

Mr. PATTERSON. Yes. I think my point, Mr. Mack, was that the procurement of an A. and E. license was rather a byproduct than the main objective.

Mr. MACK. Like a college degree. You cannot buy anything with it, but it is nice to have.

I was not quite clear on this part of Mr. O'Brien's testimony, about the apprentice programs of some of the airlines, which they have now. I understand that some of them are not accredited or not approved by the Department of Labor; is that correct?

Mr. PATTERSON. Yes; it is not a significant fact, as he implied, because, fortunately the Congress in passing our basic legislation, in the enabling act, made it clear that they can come in and register their program or that they can proceed, if they prefer to, without registering. So, there are many programs—I should point out, there are some programs in airline companies, and otherwise, which are not registered, who have not seen fit to register, and no pressure is brought on them to register.

Mr. MACK. I want to commend you on your activity. I have seen some areas where the apprentice programs have worked out satisfactory; but I have seen some other areas where it did not work out at all. I have been around both training programs, the apprentice training programs of the aviation companies, and the aircraft and engineering schools. Personally I do not think that there is any comparison between the training that you get in the school and the training you get under an apprentice training program. If I were interested in it, without question, I would go to the training school and get the education and the A. and E. rating from the school and proceed from there. I am sure that one would be as valuable to the industry after the completion of the training program as would be after completing the apprentice training program.

I noticed that you did oppose the bill that is being considered before us. I do not think that you intended to indicate that you could train an airline pilot under any kind of an apprentice training program.

Mr. PATTERSON. No, sir, emphatically not.

Mr. MACK. Thank you.

Mr. HINSHAW. Thank you.

Mr. BECKWORTH. Mr. Hinshaw.

Mr. HINSHAW. Mr. Patterson, you have on page 6 of your statement, in the second full paragraph, asked for a deferment policy for apprentices which would permit the trainees to complete their training

and "would provide civilian employers with a sound and effective reserve of knowledge and skill."

And you say that—

it is not proposed that such a policy should in any sense be considered an exemption from service. In fact, by allowing apprentices to finish their apprenticeships, the Armed Forces may find that in many instances they will be inducting skilled workers available immediately for skilled positions.

Do you have any idea that an employer is going to run an apprentice training program for persons who are liable to induction and so train persons for the Armed Forces?

Mr. PATTERSON. Employers have been almost unanimous in backing this program or proposal of the Department. However, in the short space I had in my statement I did not have an opportunity to point out that. I did refer to the Secretary of Labor's list of critical occupations. I was surprised this morning to find that eight of the occupations in the airline industry are on that critical occupation list.

Apprentices are eligible for consideration for deferment by the local boards, if the apprentices are employed in those occupations.

Mr. HINSHAW. They are eligible for consideration.

Mr. PATTERSON. It is up to the local draft boards, in both cases.

Mr. HINSHAW. They are not exempt.

Mr. PATTERSON. Maybe I have not answered your question. I realize that the employer would surely prefer to keep them after they have completed their training.

Mr. HINSHAW. As a matter of fact, being the father of a young man, I am very well aware of the fact that employers do not like to take on young men who are liable for induction into the service and spend any particular amount of time on them at all, except for use as common laborers.

Now, I do not know how you justify your statement that the employer is going to feel that he should be in the business of training people for the Armed Forces, at the expense of his company. I don't see how you testify that way.

Mr. PATTERSON. Of course, you are more than right that the great roadblock we have had to overcome in the apprentice training has been the probability, the uncertainty both in the minds of the youth and the minds of the employers.

Mr. HINSHAW. Of course.

Mr. PATTERSON. However, the employers we deal with—and we deal with large numbers, feel that this training provided would be an asset to the Armed Forces, and will also be a greater asset to them when they are discharged from the military and come back.

Mr. HINSHAW. Assuming he comes back, and assuming that he comes back to the same employer.

Mr. PATTERSON. Yes. You get the sum total of skill. That is a problem I would like to point out. One of the witnesses yesterday brought out not all employers will go into the apprentice-training program. That is one of our biggest problems, to get all of them to recognize the need and to do their part in the training program. And, you have the question of an equitable distribution.

Mr. HINSHAW. Well, I do not see how you can expect an employer to train a youngster as an apprentice and pay for his schooling, or any part of it, while he is liable for induction at any moment. He may be taken out momentarily, as has been the case in many instances, where

there is no apprenticeship program, and has not gotten very far because of the induction.

Mr. PATTERSON. Many employers have preferred to use as sources of supply for new apprentices applicants who would not be liable to the draft.

Mr. HINSHAW. Exactly.

Mr. PATTERSON. And it was on that basis that we kept the structure of the apprenticeship training going on all during World War II. There was no general deferment of apprentices during World War II.

Mr. HINSHAW. Do you think that it is better for a man to go through 4 years of apprentice training to become an A&E mechanic and a relatively few months in a school?

Mr. PATTERSON. Yes, I do.

Mr. HINSHAW. Why?

Mr. PATTERSON. I think he gets his training under practical experience, working at the right arm of a journeyman and of a foreman, and instructor. He is working on work that is live work. He will get a phases of a rounded program. He will, in addition, get his real technical instruction in a school, so that he has qualified not only to be an all-around journeyman, but he is qualified for future advancement. As already indicated, most apprentices, who have graduated have gone pretty high.

Mr. HINSHAW. But, if you have imminence of mobilization perhaps you are thereby stretching the training period 4 years, from less than 1 year; are you not?

Mr. PATTERSON. Yes; but he is producing during that period.

Mr. HINSHAW. It is quite true, he is working 40 hours as a helper, as he should, 40 hours a week and then you say that he goes 4 hours to school. So that during the 40 hours he is working as a helper, he is productive in the service he is doing, and he is earning money, and accomplishing something for his employer; but he could do that without being in the apprentice program; could he not?

Mr. PATTERSON. No. Take the situation——

Mr. HINSHAW. He could work 40 hours.

Mr. PATTERSON. He could work 40 hours; yes; he could work 40 hours; but he would not be assigned to apprenticeship work. Apprentices no longer work as helpers. They do not do common labor work. The apprentice is on a well-planned, definitely planned program where he only works so long on a drill press, and so long on a milling machine, and then he is transferred and must have experience in every branch of the trade, whereas a helper may stay on one operation for 6 or 7 years. A youth could get a high school education perhaps by spending 10 years in a library browsing around, putting in everything he had, but he goes to high school where the program is well planned, and he gets the same amount of education in 4 years. So, the same thing is true here. It is so designed that he acquires a maximum amount of skill.

Mr. HINSHAW. But he never becomes fully qualified in any of those things?

Mr. PATTERSON. That is true. One's education is never completed. That applies to the apprentice.

Mr. HINSHAW. The only advantage that he is to his employer is when he has completed his apprenticeship training.

Mr. PATTERSON. I would not say that, because the testimony of the employers universally is that the apprentice pays his way from the first day he starts. He is not a burden or financial loss to the employer.

Mr. HINSHAW. If he does not become skilled in any of those operations I do not see how he becomes very valuable.

Mr. PATTERSON. Well, he becomes skilled at the end of 4 years to the point that he is accepted as a journeyman mechanic by industry and by labor.

Mr. HINSHAW. That is what I am saying, at the end of 4 years he becomes skilled.

Mr. PATTERSON. But at any period during that 4 years he has acquired considerable skill that is useful in getting more production.

Mr. HINSHAW. Do you object to the idea of a young man going into a school to learn to become an aircraft or engine mechanic? Do you think that that is the wrong procedure for him to take?

Mr. PATTERSON. No; I do not object to anything that adds to his skill or is of benefit to him and of the Nation.

Mr. HINSHAW. Well, do you think that it is a good idea that they go to these schools?

Mr. PATTERSON. I do not want to duck your question, but I think the better idea is to enter the apprenticeship training program.

Mr. HINSHAW. Of course that is understandable. You are running the apprenticeship program in the Department of Labor and naturally you would be inclined in that direction.

That is all, Mr. Chairman.

Mr. BECKWORTH. Thank you very much.

Mr. PATTERSON. Thank you.

Mr. BECKWORTH. The committee will stand adjourned until 2 o'clock this afternoon.

(Thereupon, at 12:06 p. m., the committee took a recess until 2 p. m. of the same day.)

AFTERNOON SESSION

The hearing was resumed at 2:20 p. m., upon the expiration of the recess.

Mr. BECKWORTH. The committee will come to order.

Mr. Harold G. Vavra of Bismarck, N. Dak., will be the first witness.

STATEMENTS OF HAROLD G. VAVRA, DIRECTOR, STATE OF NORTH DAKOTA AERONAUTICS COMMISSION, AND LESTER O. JOLLY, COMMISSIONER, NORTH DAKOTA AERONAUTICS COMMISSION, BISMARCK, NORTH DAKOTA.

Mr. VAVRA. Mr. Chairman, my name is Harold G. Vavra. I am the director of the State of North Dakota Aeronautics Commission.

Mr. Jolly, who is present, is a member of the aeronautics commission.

Our joint statement, which follows herewith, sets forth the official opinion of the State of North Dakota Aeronautics Commission in regard to the proposed legislation before the committee.

We wish to endorse the legislation.

The aeronautics commission is charged by statute to cooperate with and assist the Federal Government and other persons in the development and coordination of all State aeronautical activities.

Therefore, we welcome the opportunity to discuss the proposed legislation which provides some Federal assistance in supplying the necessary skilled aviation manpower through the training of aircraft and engine mechanics, electronic technicians and pilots to maintain a body of trained aviation manpower to meet the defense mobilization needs of the United States.

1. Aviation manpower requirements. There is an acute shortage of skilled aviation manpower on both the basis of present and future requirements. This has been aggravated by the constant drain of trained personnel in the aviation industry in this State and in the nation caused by our sustained rapid manpower build-up for military purposes.

In addition to the demands being made by the military, the commercial airlines have made great advances since World War II. Following the last war 17 new local service air carriers have been certificated by the CAB along with the continuous expansion of existing airlines has skyrocketed the demand for qualified pilots and mechanics. Aerial agriculture has developed to major proportions since World War II utilizing some 5,000 light planes and pilots, further drawing on the reserve of trained aviation personnel. In fact, in North Dakota alone some 178 airplanes were utilized in 1951 for aerial crop spraying and dusting, thus augmenting the production of food which is essential to mobilization needs of the country. A shortage of aerial sprayer pilots was in evidence last year and this year the depletion of both pilots and mechanics will be greater.

The National Security Resources Board—Task Group on Aviation Manpower—has estimated under M-day requirements there will be a deficit of at least 16,000 trained aviation personnel. This means that the airline industry alone will need 40 percent more skilled personnel to meet present and known M-day requirements.

Scheduled airlines will be short 1,800 pilots and 10,500 airplanes and engine mechanics alone by 1954. Shortages of technicians and pilots exist in all branches of aviation. The solution for the shortage of airmen is to increase the total available resources. The foregoing reports and studies are set forth by the defense air transportation administration.

2. What has happened to the postwar supply of airmen?

Five years ago the Civil Aeronautics Administration issued 193,000 student permits. Last year the number had dwindled to 48,000. In 1947 more than 120,000 private pilot licenses were issued to budding aviators. In 1951 the number was down to 23,800. With the military, commercial, and private demands for pilots and mechanics becoming greater and greater in the last 2 years; the actual supply has become less and less as indicated by the above statistics.

The precipitant decline in private flying has been followed by an even greater drop in production of personnel aircraft. In 1946 the aircraft industry produced 34,563 personal aircraft. Last year the number of such planes produced was shrunk to 2,250 and only 600 of these were one- and two-place light airplanes.

Almost every community of any size at all in the United States has an airport or a flight strip. The CAA reports a total of 6,561 airports in the United States. This figure has grown considerably since World War II under the impetus of the Federal-Aid Airport Act of 1946. The number of airports, now available, is much greater than 1947—yet

private flying has declined steadily since 1947. The number of CAA-approved flight schools has dwindled in 5 years from over 3,000 to 1,539 as of January 31, 1952.

Reasons for these conditions are well known. The military has absorbed a large number of the youth of the country. The limited finances of youth can purchase less and less flight training due to high costs of planes, fuels, and instruction. The high level of taxation on a Federal, State, county, and city level leaves less and less funds available for youth in this country to take up flight training and finance same out of the family income. The reservoir of youth which would seek aviation training has been drafted in the military program.

With civil aviation at a very low ebb, the United States Air Force must turn to American youth, who are not only interested in flying, if given the opportunity, but are willing and able to put forth youthful enthusiasm behind their efforts to master the jet age. Most of us will agree that American air power cannot survive without youth. Since Korea this country has expended untold billions of our resources in designing and manufacturing jet aircraft. The Congress, and justly so, has accepted "air power" as a must if this Nation is to survive in the atomic age.

It is becoming more and more evident that we cannot build and maintain an Air Force—pilots, mechanics, and technicians—with only the reserve personnel of World War II. We have depleted our reserves now. If this statement is correct, and all facts so indicate, then it must be accepted from the foregoing statements that the United States has no program for fostering and encouraging the youth to become the pilots, mechanics, and technicians of the present-day jet and atomic age. Aviation developed and grew under the impetus of youth in the past two decades. If we continue to neglect youth in the present-day "air age" the very foundation of American air supremacy may be jeopardized.

American air supremacy cannot be developed and maintained over any period of time without a solid foundation—the interest of the youth of this Nation. What is needed is a balanced program. Effort must be maintained at all levels—since a chain is only as strong as its weakest link. A training program of this nature must begin at the "grass roots" level at the community airport in every town of any size in the United States.

Retired General Carl A. Spaatz, whom General Eisenhower called the greatest air strategist in history, just published an article in the May 1952 issue of Flying magazine in which he said the Nation is dangerously short of youngsters who want to fly.

The former chief of the United States Air Force said demands by youths for flying instruction are critically below the level needed to sustain a major air power.

According to General Spaatz: "But never—until 1946–47—did I become concerned about our youth in this air age." According to General Spaatz the Air Force at this time began to experience difficulty in filling even small quotas for aviation cadet classes—an unheard of condition heretofore.

3. Meeting the requirements.

H. R. 7074 in our opinion is a step forward in providing the opportunity for American youth at a high school and college level to under-

take technical or pilot training which will help meet the defense mobilization needs of the Nation.

The bill provides for the Secretary of Commerce to enter into contracts with public and private training agencies and institutions for the training of aircraft and engine mechanics, aviation instrument and electronics technicians, pilots and ground personnel. The provision in H. R. 7074 for the United States to pay not to exceed 75 percent of the cost of such training while the trainee will pay 25 percent is, in our opinion, an excellent safeguard. Sharing the costs on this basis will encourage interested students to take advantage of the reduced cost of the training while at the same time discourage potential trainees from enrolling who may seek such training for pleasure or killing time.

The bill incorporates a very worth-while provision under section 6 whereby:

> no person shall be accepted for training unless he furnishes assurance satisfactory to the Secretary of Commerce that upon completion of such training he will engage in or remain available for aviation employment or service.

To meet the needs set forth in this bill we recommend that $18 million be appropriated to carry out the act during the first fiscal year which begins on or after the date of the enactment of the act and such additional sums as may be necessary to carry out this act during fiscal years following such first fiscal year.

Proposed numbers of each class of airmen to be trained together with tuition fees, student contributions and total Government costs is listed in the following table.

Mr. HINSHAW. Mr. Chairman, I think that table has been inserted in the record before, so I think we can skip it. It might be included at this point in the record, but he does not need to read it.

Mr. VAVRA. I then will not read the statistics here, and will proceed to the last paragraph on page 6.

(The tabulation referred to is as follows:)

Class	Number	Approximate cost per course	Total cost	Total student contribution	Government aid
Technicians:					
A. & E. mechanic	7,500	$1,000	$7,500,000	$1,875,000	$5,625,000
Instrument technician	1,000	1,000	1,000,000	250,000	750,000
Electronic technician	1,000	750	750,000	187,500	562,500
Pilots:					
Indoctrination courses (private pilot with ground school)	10,000	600	6,000,000	1,500,000	4,500,000
Instructor course	2,000	500	1,000,000	250,000	750,000
Instrument course	2,000	600	1,200,000	300,000	900,000
Commercial course	2,800	1,500	4,200,000	(1)	4,200,000
				4,362,500	17,287,500
3 percent CAA administration cost					518,625
Total cost to Government					17,806,125

[1] Holding a current private pilot's license for which the applicant has paid personally or by entitlement under the GI Bill of Rights could be a qualification for enrollment in commercial flight course, under administrative procedure.

Mr. VAVRA. The proposal to train 7,500 aircraft and engine mechanics is sound from every view point. All branches of the aviation business and the military are short of trained A. & E's. This includes private flying schools, commercial airlines, aircraft

factories, and the U. S. Air Force. Instrument and electronic technicians are equally short in aircraft factories, airline maintenance shops, and elsewhere.

The proposal to train 10,000 pilots in so-called indoctrination courses—flight training and ground school leading to a private pilot's license—stems from the success of World War II (CPT) civil pilot training program. We recommend that prospective trainees considered for this course be carefully screened limiting the age to 27 and possibly requiring a minimum of 60 credit hours in a recognized college or university. The objective of this type of program is to get more of the Nation's youth interested in flying and to provide the necessary reservoir of pilots who can be drawn upon for advanced training by the military. The U. S. Air Force must have a constant stream of youth taking up flying if the country is to maintain a strong air arm over a period of years. The provision in the bill whereby the trainee must pay 25 percent of the cost will automatically screen out those who have no serious interest in a useful aviation career.

Instructor and instrument courses: These are basic courses required to maintain instructors in private schools and instrument pilots for the commercial airlines. These cannot be overlooked in any pilot build-up program.

Commercial courses: At the present time there is a great shortage of pilots holding commercial ratings. The airlines alone will need 1,800 additional commercial pilots by 1954. There is a shortage of commercial pilots to handle aerial crop spraying and dusting throughout the farm belt of the United States. Contract schools under Air Force contract are having difficulty getting commercial pilots. It is believed that 2,800 proposed in this program would answer the future needs.

Mr. MACK. Do you not think it is more important to train them in primary training for private licenses, rather than commercial courses?

Mr. VAVRA. Mr. Chairman, Mr. Jolly is here, and I believe from the standpoint of the training program, he has more experience than I, and I would prefer to have him answer the question that was just brought up by Mr. Mack.

Mr. JOLLY. Well, I am an ex-airline pilot, and I recall in World War II, I was with a major airline when it broke out, and I recall we took these boys in probably 1942 and 1943, after they had completed their civilian pilots training program, and brought them into the airline.

The CAA had taught them to walk, as it were, and we put them through a transition course for approximately 6 weeks. Without that CPT material we had in those days, I don't know how we could have expanded our operations out to the Aleutian Islands as we did. I don't think we could have done it without the CPT boys to draw from. I can speak very highly of that because of the experience we encountered at that time.

Mr. MACK. Mr. Jolly, do you not feel that the emphasis should be placed on training people for private certificates?

Mr. VAVRA. Well, we took these CPT graduates with limited time, down to 250 hours, and employed them as copilots in a 6 weeks' transition course on C–46's and C–47's at that time.

I feel the only way to sell aviation is through the youth of this country in the local community. I think the young man has got to go home and live and sleep private flying, in order to sell it to his parents.

Mr. MACK. Another thing: In your statement you had reference to the CPT program. You speak of the World War II CPT program?

Mr. JOLLY. Yes, sir.

Mr. MACK. You really mean the CPT program prior to World War II, do you not?

Mr. JOLLY. Yes, sir.

Mr. HINSHAW. Mr. Chairman, I do not have any questions of the gentleman who is on the witness stand, but I see an officer of the Air Force here, a gentlemen with whom this committee is well acquainted, and I would like to make a brief comment, which I trust the Legislative and Liaison Division of the Air Force will transmit back to the Air Force as soon as this meeting is adjourned, if I may be so privileged.

Mr. BECKWORTH. You may make that statement.

Mr. HINSHAW. The CPT program originated well prior to World War II. Something like a hundred thousand youths were given the opportunity to fly before 1942. Most of them, certainly all of those who were physically qualified, applied for it, and I think most of those ultimately became pilots in the Air Force.

As soon as the Air Force got under way with a sufficient number of pilots to carry on, they took over the CPT program within the military and conducted it mostly themselves in accordance with their own ideas of how it ought to be conducted. But I should like the heads of the Air Force to know that it is my personal opinion that the original primary training given these hundred thousand-odd youth of America relieved most of them from any fear that they had of flying, encouraged them to like it and to engage in that aspect of flying when war came; and that program, in all probability, was the greatest stimulus that the Air Force recruiting ever received. Whether or not the Air Force chooses to endorse the program at this time, I would like to call the attention of the Air Force to the fact that they are having difficulty finding cadets at this time, but in all probability if there was in existence a civil pilot training program they would have no difficulty in finding cadets for the Air Force right out of that program.

Now, that may seem a small matter, but there is a matter of psychology that goes along with taking the first steps in flying. When that first step is once taken, any fear that there may have been, or apprehension, is gone. I venture to say that if they change their minds about the present bills or proposals, and whether they be in proper bill form or not, or should be revised, is another question, the Air Force and perhaps the Navy, too, would find itself in much better shape as far as candidates for its cadet training program are concerned. I think that the Air Force has lost sight, in recent years, of the great propaganda effect that a few hours of flight have on the youth of our Nation. It is about time that they began to recollect some of the principles that they so strongly preached to the Congress a little while ago and have since forgotten.

As a matter of fact, upon inquiry of our committee for someone in the Air Force today who knew anything at all about the CPT program, we have searched the Pentagon high and low and can find no one in

it who has any knowledge whatsoever today of the value or effect of the civil pilot training program upon the advancement of the Air Force and its mission. And that, in itself, is a commentary which might well be looked into.

That background having gone from the Pentagon, and the Air Force in particular, they have completely lost sight of the original reasons and bases for that program and the benefits that flow from it.

If for nothing else but propaganda, it was one of the best things that ever hit the Air Force. It is about time that somebody be gotten back into the Air Force who understands it.

That is all I have to say.

Mr. DENNY. I would like to second very heartily what Mr. Hinshaw says, and I would like to say this: I believe that is one of the fundamental things that has caused the lack of interest among the youth in aviation. There is no question that it is dropping off. I have noticed it in the programs of the Boy Scouts of America, where they have basic training for air scouts. Mr. Jolly, I am sure you know about that. And I think that is one of the most glamorous things that we ever had. It could not be a military thing. But with the help of the CPT it could develop into a very much greater thing.

Now, I do not see anything very attractive in this program presented today that is going to encourage us to get more pilots. In fact, I think there are a great many things in this program that would discourage it. I think there are a great many things in this military program for pilots that would tend to discourage it rather than encourage it.

Mr. HINSHAW. The mere fact that in all practical effect you are going to have to go through an ROTC training, which is about equivalent to going to college, a pretty good college at that, and take a few months of flying, over 4 years, and then go further into training in the Air Force, is a clear indication of what you have said, Colonel; whereas during the war, youth of 17 and 18 years of age could be given this CPT course, and then, after they had had 2 years of college or its equivalent in the junior college, they could become cadets.

Mr. DENNY. This does not promise them a commission.

Mr. HINSHAW. The present ROTC program does not promise them anything; nothing but having to to into the service after 4 years of college, for 2 years plus 6 in the Reserves. I think the entire program of the armed services in connection with attracting youth to flying and encouraging flight has completely gone to pot, and it is about time the military services woke up to the facts as to why they are not getting all of the recruits they hoped to get.

Mr. BECKWORTH. Are there any other questions?

Thank you very much, Mr. Vavra.

Mr. VAVRA. Thank you.

Mr. BECKWORTH. The next witness we shall have is Mr. Donald Webster.

STATEMENT OF DONALD WEBSTER, GENERAL MANAGER, NATIONAL AERONAUTIC ASSOCIATION

Mr. WEBSTER. My name is Donald Webster. I am a past president and currently the general manager of the National Aeronautic Association. Ever since becoming an aircraft pilot in 1927, I have been closely connected with aviation. During the last war, I was

a United States Air Force officer attached to the Flying Training Command. Ever since the end of World War II, I have been actively engaged in many phases of civil aviation.

The National Aeronautic Association with its many chapters throughout the country, together with our organization affiliates, number one of which is the United States Civil Air Patrol, has thousands of grass-roots members interested in American aviation and United States progress in aviation. One of the principal objectives of the National Aeronautic Association is to support good legislation which affects the interests of American aviation and thereby directly affects the security of our country.

This statement is submitted for the purpose of asking your committee to give favorable consideration to H. R. 7073 (Mr. Beckworth) and H. R. 7074 (Mr. Hinshaw). These bills which propose Federal aid to meet the defense mobilization requirements of the United States by providing for the training of civilian aviation personnel are, in my opinion, vitally important for the immediate and future good of American civil and military air power. I cannot urge strongly enough that the members of this committee act now to effect the immediate passage of this legislation to help offset the critical shortage of trained civil pilots and aviation technicians.

Mr. BECKWORTH. Thank you, Mr. Webster. The next witness is Mr. Paul A. Schweizer.

STATEMENT OF PAUL A. SCHWEIZER, SECRETARY OF THE SOARING SOCIETY OF AMERICA

Mr. SCHWEIZER. My name is Paul A. Schweizer. I am secretary of the Soaring Society of America. I am also vice president and general manager of Schweizer Aircraft Corp., Elmira, N. Y., which has been active in glider construction and operation for the last 20 years.

The Soaring Society of America is a national organization of glider associations, groups, clubs, and individual glider pilots and enthusiasts and through its affiliation with National Aeronautic Association it represents the Federation Aeronautique Internationale in all motorless-flight activities. One of the Soaring Society of America's principal objectives is the advancement of American air progress through gliding and soaring.

This statement is submitted for the purpose of expressing the Soaring Society of America's desire to see that H. R. 7073 and H. R. 7074 are given favorable consideration by your committee. Although we do not have any other specific recommendations at this time, we would appreciate an opportunity at a later date to present to you our conclusions on just where gliding and soaring fit into our national aviation-training program.

(Conclusions and summary of Soaring Society of America follow:)

INTRODUCTION

The following true story may well serve as a preface to a statement of facts concerning the role of gliding and soaring in American aviation today.

In Korea recently, Air Force planes and helicopters were running into serious difficulty in flying over a 7,000-foot mountain range against high winds up to 80 miles an hour.

Then, a young fighter pilot from Texas surprised everyone, making the hazardous run with record speed and ease. The story came out:

Back home in Texas, the young pilot's hobby is soaring; he has his own sailplane. His knowledge of meteorology, gained through gliding and soaring, has made him familiar with certain atmospheric conditions over mountains.

His own words, in a letter this past December from the Korean war front to fellow members of the Soaring Society of America, are dramatic in simplicity:

"* * * By experimenting a little, I found the wave. It is right where it should be. Extreme turbulence for about 30 seconds followed by a severe jolt and then glassy smooth lift * * * I've explained the wave to one 'copter pilot, and he is very interested in it, as the 'copters have quite a time in these strong winds."

This story speaks eloquently for itself.

I. SOARING COMES OF AGE

Soaring in the United States has come of age. Soaring [1] stands on the threshold of a great service to the aviation industry and the Nation as a whole.

Soaring has much to offer. Its American pioneers have, in the short period since 1930, pointed the way in many fields, and established a worthy record of accomplishments.

Soaring now is ready to take its place as an active handmaiden to the aviation industry of the United States.

In the summer of 1951, a milestone event occurred in American soaring:

A young American, from California, flew a sailplane of his own design (motorless, of course) a distance of 535.1 miles. This broke the world's record—previously held, or claimed, by Soviet Russia.

In the countries of Europe and in the British Isles, where gliding and soaring are popular, having governmental and military support, the American performance aroused widespread admiration. The prestige of American soaring has increased throughout the world. This isolated achievement is but a reflection of the quality of the soaring movement in the United States.

The Soaring Society of America is presently seeking to make possible American participation in the world soaring competitions to be held in Spain, June 30 to July 15 of this year.

II. WHERE SOARING SERVES

Soaring in America has developed a body of enthusiasts (including experts in many fields of aviation), with a rich fund of practical and theoretical knowledge, a basic national organization with its own magazine, Soaring, and a dynamic, red-blooded spirit, ready and eager to serve larger purposes for the national good.

Here are the major fields in which American and world soaring is already making valued contributions:

(1) Scientific research, including meteorology, aerodynamics and flight factors;

(2) Air youth education;

(3) Design and development of sailplanes, with results of value to powered plane design, notably now in the high-speed and supersonic classifications; and

(4) Pilot training, and the broad field of sport, recreation and competition, regional, national and international, with its many rewards in the over-all striving for human betterment, individually and socially.

Soaring, solely as sport, may be further considered as performing a valued "public relations" service for the cause of aviation as a whole.

III. SOARING AND SCIENTIFIC RESEARCH

In scientific research, soaring is making contributions in the following categories: Meteorological studies; aerodynamics; flight mechanics; natural flight; structures, and instruments.

Consider the two important fields of meteorology and aerodynamics:

(1) *Meteorology.*—Meteorology is primary with soaring, as with few other activities. Soaring is based on harnessing the atmosphere to flight, as its sole motive power. Few fields are as closely concerned with the study of wind and weather, cloud and storm, atmosphere and stratosphere. Hence, soaring is constantly and continuously, producing meteorological data of great value, increasingly helpful for safety of planes [2] in the air and weather forecasting generally.

[1] The terms "soaring," "gliding," and "motorless flight" are here used interchangeably.

[2] Violent turbulence phenomenon in lee winds over mountains—suspected as a possible cause in many air transport crashes—is now being investigated as a joint sailplane project of the Soaring Society of Southern California and the University of Southern California at Los Angeles.

(2) *Aerodynamics.*—Today, glider or sailplane pilots are making findings that are material contributions in the sphere of aerodynamics. Surprisingly to some, sailplane experience is proving of immediate application to problems of new jet and high-speed and supersonic aircraft.

In many respects, sailplanes are proving themselves to be ideal flying laboratories, yielding important test findings at low cost.

Incidentally, it is customary at regional and national soaring meets, as well as international competitions, to conduct scientific sessions, at which valuable papers on many phases of aeronautical science are presented.

At Mississippi State College, a research project conducted with sailplanes has yielded significant new data bearing on aerodynamics. Success of the project has led to the drafting of a plan for an Institute of Flight Research, a detailed prospectus of which has been prepared under the auspices of the Soaring Society of America.

IV. SOARING AND AIR YOUTH EDUCATION

Here is a field of tremendous scope for soaring, of the greatest possible benefit to the cause of aviation. Gliding and soaring are the natural stepping stone for boys and girls in the transition from model planes to life-size flight.

Gliding is safe and low cost; it is an outdoor sport; it is a group activity, and an ideal introduction to aviation. It helps build up the character traits valued in our American way of life—resourcefulness, teamwork, healthy nerves, mechanical ability, a knowledge of nature and science.

Air youth education embraces, through motorless flight, the following categories: Gliding and soaring instructions (high school level); teaching in crafts (high school level); basic principles of construction and maintenance (technical school); aeronautical drafting (technical high school level); aeronautical design (college level); meteorological application and practice to flying; civil air regulations and safe practices.

Already a start has been made in various cities of the United States. Splendid opportunities exist for a program enlisting thousands of young people in a fine, red-blooded, constructive activity, a first introduction into the "wild blue yonder."

Soaring bridges the gap that now keeps high-school and even college-age youths from active, direct entry into the field of aviation. Potential benefits to aviation from a widespread soaring movement in America can readily be foreseen.

V. SOARING AND DEVELOPMENT OF PROGRESSIVE DESIGNS AND STRUCTURAL TECHNIQUES

Like aviation generally, soaring has made advances swiftly. In 1925, the greatest altitude attained by a sailplane was about 2,400 feet, the distance flown 15 miles, and greatest duration aloft was 10½ hours.

Compare this with recent performances: Altitude, 42,100 feet; distance, 535 miles; duration, more than 50 hours.

Sailplane design concerns itself with the following categories: High-performance prototypes (new models); trainer prototypes; prototype tow plane (powered); experimental prototypes; and design competitions.

Many designers of sailplanes are also designers of military and commercial aircraft. Sailplane design affords an opportunity, at low cost, for experiments that can have the greatest value in developing high-cost, powered aircraft. Many successful aircraft today were originated by sailplane designers.

Here is a statement by an aircraft designer:

"Motorless aircraft have served as an auxiliary scientific research tool for the exploration into the stability and maneuverability of new types of fast aircraft, as they yield nearly full-scale empirical data."

There exists now in the soaring movement a strikingly interesting literature of sailplane design, in relation to aircraft.

VI. SOARING AND TRAINING, RECREATIONAL AND CONTEST FLYING

Training, recreational, and contest soaring offer excellent possibilities in the following categories: Recreational and proficiency training at military air bases; gliding and soaring as flight training for air reserves; gliding and soaring for sport; national and international record attempts; national contests as sporting events; international championships to promote good will.

Today, when national survival itself is a matter of American air supremacy, consider the following testimony of an Air Force colonel, now on active duty:

"Those military pilots whom I know that are participating in, or have participated in, soaring, recognize it as a valuable part of their aeronautical knowledge.

"It improves their detailed knowledge of the atmosphere in which they fly, and permits them to more intelligently select en route weather. It sharpens their judgment on approaches and landings.

"It eliminates or modifies the initial, terrifying reaction associated with engine failure, since they are accustomed to planning emergency landings without power.

"As a recreation, it permits a pilot to relax from the rigors of high-speed powered flight while still maintaining proficiency, sustenation, and feel for flying with a minimum of cockpit procedure."

A German expert, formerly with the Luftwaffe and now a consultant with an American aviation company, recently mapped a program for revised training of pilots in rocket, jet, and other new-type high-speed planes, in which sailplane piloting would be a "must" in preliminary preparation.

It is perhaps not generally realized that under certain conditions high-speed planes, especially if athodyd or rocket-powered, have approximately the qualities of speedy sailplanes.

One expert, who has served as instructor in both motorless (glider) and powered flight, explains this fundamental principle behind the superiority of pilots who have had soaring experience:

"The reason is that motorless flight training evokes the cultivation and the refinement of a natural sensitivity toward the pilot's element, the air, as well as toward the plane he flies."

CONCLUSION AND SUMMARY

Soaring is now the hidden asset of American aviation. It should be developed and exploited for the good of industry and the Nation.

In war or peace, American soaring will serve the country—in science, in industry, in defense, in building world good will, in making the youth of today the self-reliant, alert citizen of tomorrow.

Soaring will constantly widen man's knowledge of weather, and help make possible increasingly accurate forecasting, and even control of weather, in some degree.

Soaring will serve as a testing ground, with sailplanes as "flying laboratories" or motorless "guinea pigs," to help aviation produce planes of improved design, efficiency, and safety in the air.

Soaring will multiply by thousands, possibly tens of thousands, the number of young men and women actively familiar with flight.

Soaring will create a new industry, for the manufacture of sailplanes and gliders. (Glider development itself, which in World War II produced troop-landing gliders, may again provide the answer to transport needs, either in war or peace.)

Soaring will become a vital factor in education for an air age.

It is a fact that many of the leading individuals in America's young soaring movement are today among the most enthusiastic working designers, aeronautical engineers, craftsmen, and pilots, whose hobby of soaring is helping them daily do a better job for their aviation companies.

Today, the aviation industry has the opportunity to serve itself, and serve the Nation, by extending its close cooperation to the soaring movement. There is an able, industrious group of men and women in soaring prepared to achieve maximum results now in cooperation with the industry.

Soaring gives wings to anybody's thoughts.

The Soaring Society of America urges that full consideration of training in motorless flight be given in any planning for broad flight-training programs.

It is in the best interest of the Nation and aviation that American soaring teams compete in all international soaring events.

The Soaring Society of America welcomes correspondence and inquiries from all interested individuals or organizations. Letters should be addressed to—

SOARING SOCIETY OF AMERICA,
JON D. CARSEY, *President, Dallas, Tex.*

Mr. BECKWORTH. Is Mr. John T. Griffin here? You may come forward, Mr. Griffin, and identify yourself for the record.

STATEMENT OF JOHN T. GRIFFIN, VICE PRESIDENT, NATIONAL AVIATION TRADES ASSOCIATION, WASHINGTON, D. C.

Mr. GRIFFIN. My name is John T. Griffin and I am vice president of the National Aviation Trades Association. I also served as chairman of the National Security Resources Board Air Transport Mobilization Task Group on Training. In addition, I am a member of the United States Aviation Development Advisory Committee and a member of the Advisory Committee to the Defense Air Transportation Administrator. I have actively engaged in aviation for over 22 years. I was formerly operations manager for one of our certificated air carriers, and during World War II assisted in the development of transoceanic and Arctic air routes for the Air Transport Command. In 1932 I founded a civil aviation training institution and am still serving as president and general manager of that institution, which is celebrating its twentieth anniversary next month. I am today testifying on behalf of the members of the National Aviation Trades Association, comprised of commercial airport operators throughout the United States.

Gentlemen, I submit to you that there is developing an air power deficiency which, in my opinion, is seriously jeopardizing the desired rate of build-up of American air power, unless immediate steps are taken to recognize the problem and apply all necessary corrective measures.

The late Gen. H. H. Arnold, commanding general of the Air Corps in World War II, and later first Chief of Staff of the United States Air Force, defined air power as follows:

> The Nation's air power is its total aviation activity, civilian, military, commercial, and private, potential as well as existing.

The American Legion, at a recent annual convention, passed a resolution on air power, an extract from which states the following:

> No nation that merely has airplanes in the hands of its professionals can be said truly to possess air power.

Today the United States is rapidly approaching the point where it has airplanes and aviation skills only in the hands of its professionals. Most phases of the civilian aviation industry have experienced rapid expansion during the past 4 years, and that expansion still continues. The air transport industry is rapidly expanding and will accept delivery of nearly 400 new airplanes as soon as they can be manufactured. Industrial aircraft ownership and operation have finally been accepted as an indispensable tool in modern industry. The number of aircraft operated in this category is rising each month.

The use of the airplane in agriculture has been accepted as one of the most economical means of increasing the production of food, and the number of airplanes operated in this category is increasing annually. The Secretary of Agriculture has recently called for another increase in crop output, and this in turn will demand even more utilization of agricultural aircraft.

Of the total 6,486 pilots employed in agricultural flying during 1951, 61 percent of them were subject to military recall. Many have already been recalled. A substantial proportion of corporation aircraft pilots and training-school instructors, are also military reservists.

Airplane maintenance service is no longer available at many civil airports because of the lack of certificated mechanics.

Testimony will be presented before this committee by other segments of the aviation industry which will indicate to you the extraordinary demand for increased output of trained aviation personnel in many categories. Defense requirements placed on the aircraft manufacturing industry, as well as on the air carriers, have already absorbed skilled personnel formerly employed in the smaller aviation businesses, and the pipeline is now dry. The Secretary of Labor has placed multi-engined pilots, agricultural pilots, and aircraft and engine mechanics on the list of critical occupations.

In addition, the United States Air Force has adopted a policy of conducting its basic flight training in civil contract schools, and nine of these schools are already in operation. Staffing of these schools with qualified pilots and technicians has been a rather serious problem and one which has created shortages in airman skills in other segments of the industry. Acceleration in our aircraft production rate will in turn require acceleration of the pilot output rate, which means that additional contract schools undoubtedly will be required.

Also the Air Force is now preparing to evaluate a screening or prebasic flight indoctrination program for its cadet applicants. If this program is found to be desirable, it will require another substantial increase in the demand for pilot and technician personnel.

There are on file with the Armed Services Committees of the Congress so-called ROTC bills which would extend this type of flight-screening program to students enrolled in college ROTC units. If this legislation is enacted, it is estimated that the participating civil schools will require an additional 1,200 civil instructors and approximately 600 mechanics.

Military overhaul and repair depots are staffed by skilled civilian personnel and the build-up in military air power will create a proportional increase in the demand for these skilled civilians. I have been advised that these depots are already experiencing extreme difficulty in procuring skilled workers.

Aircraft manufacturers are short of skilled personnel, and are now embarked upon extensive employee training programs. Radio and electronic technicians have been absorbed to a large extent by the electronics manufacturing industry for mobilization production. It is practically impossible today to find a trained electronics technician.

A national survey is now being conducted by the Civil Aeronautics Administration for the purpose of determining present availability of skilled personnel in those phases of the aviation industry not already covered by industry surveys, and also to determine the probable shortages that already exist in these skills. Present indications are that there is no surplus in any portion of the industry in these critical skills; namely, pilots, mechanics, instrument technicians, and electronics technicians. Therefore, if the civil aviation industry is to be expected to be capable of performing its planned functions under mobilization, we must start now to create the required trained manpower. The manpower policy committee advises that the most serious pinch in the trained manpower picture will not occur until 1955.

One would naturally think that the existence of such a situation would tend to attract a flood of American youth into schools which train young men for these skilled occupations. However, that is not

the case; we think principally because of uncertainty of what the future holds, and the imminence of military service for most of them. Virtually the only source for the training of civil pilots is the private civil aviation schools, and statistics show that the civil aviation industry has always procured from 85 to 90 percent of its technicians and mechanics from the private technician schools certificated by the Civil Aeronautics Administration. Yet, CAA statistics compiled on January 1, 1952, relating to these certificated schools reveal that the enrollment in these schools is at the lowest point in several years, and is rapidly declining. These statistics show that of all the male high-school graduates in the United States last June, not more than 793 entered these schools for the purpose of training to become certificated aviation technicians. Six hundred and sixty-four of this total enrolled in day courses which require from 12 to 18 months for completion and the balance enrolled in evening courses which require about 3½ years to complete.

Projecting the results of this drastic decline in enrollment, the Civil Aeronautics Administration estimates that of the 46 certificated schools involved, it is likely that 35 of them, and possibly 41 of them, will have to close by the end of 1952. The disappearance of this training resource would mean the elimination of virtually the entire available source for fulfilling the training requirements of the civil aviation industry. It would likewise eliminate the readily expandable platform which has been available to the military air services in time of emergency to assist in making it possible for them to meet their manpower training quotas.

Just prior to World War II, the Air Force was forced to call on the civil training institutions for assistance in giving basic mechanic training to thousands of Air Force enlisted personnel and this program was continued and expanded until 1944. To again quote General Arnold:

> The training task we had to undertake was terrific. By December 1942 we had graduated 266,000 mechanics and by the end of 1944 we had graduated 997,000. That expansion was possible only because great military leadership teamed up with civilian know-how in a typical American partnership.

During World War II the Air Forces utilized the facilities of approximately 55 civilian aviation technical schools. At the close of World War II all of these contracts were phased out because, according to Air Force testimony, "there was adequate capacity on the military bases in which to conduct this training." However, when the Korean war commenced, the Air Force was again forced to call upon the civil training institutions in order to meet its personnel training requirements and I would like now to quote from the testimony of Col. G. B. Dany, Deputy Director, USAF, Training, before the House Appropriations Committee on March 6, 1952:

> So far as the contract technical training was concerned, we took the first expansion which came after Korea on our own stations. We did it by going to multiple shift operations: two, three, and four shifts. We did it by crowding our people, so far as housing was concerned, on below-normal, and even below, emergency type of housing.
>
> However, with these types of measure we still were not able to meet the requirement for the build-up of the Air Force which at that time was somewhere around 48 groups to 95 groups. It was, therefore, necessary to supplement the military training capacity.
>
> Inasmuch as the technical contract training schools existed, or could be put into existence, or could be expanded, provisions were made in fiscal year 1951

for funds to provide for the contract training of approximately 30,000 airplane mechanics, clerk-typists, automotive mechanics, and other trade-school specialists, who could be trained in existing or expanded contract schools.

In the 1952 budget we asked for money and secured money to train an additional 12,000 or 13,000 in trade schools. In the fiscal year 1953 we are not asking for any money for trade-school training, by virtue of the fact that we now have in the military school sufficient capacity to conduct this training.

This capacity was built up during the fiscal years 1951 and 1952 with public works funds, to provide for the military training of all of our mechanics and various types of technical-trained specialists on our own bases.

When we went into the technical training program in the contract schools we announced that this was an interim program, and that we would call on them for this type of training until such time as adequate capacity existed in the military schools. The Air Force is pursuing its initial policy, which was announced.

During the period just referred to, Air Force statistics indicate that the Air Force trained within its own establishment, in the categories of airplane and engine mechanic, and airplane maintenance fundamentals, a total of 104,637 men. During that same period in these categories a total of 9,407 men received training in civil contract schools. Consequently, it is obvious that less than 10 percent of the total load was handled by the contract schools. I think it is also obvious that the Air Force would not have used these contract schools unless it became mandatory if they were to meet their training requirements.

On April 30, 1951, I reported to the Chairman of the National Security Resources Board relating to this contract training program, in which I stated the following:

> A review of current Air Force plans and actions involving the use of civil training facilities seem to indicate a lack of adequate planning, which has resulted in the creation of considerable chaos and indecision within the civil training institutions. Current contracts and plans instead of assisting to preserve civil training institutions, may result in financial disaster for many of them. Insufficient time interval has been allowed, up to now, to permit civil institutions to adequately plan and provide for the accommodation of military students. Until very recently all inquiries by civil institutions as to military plans for utilizing them have been met with the reply that there were no such plans. Some replies to these inquiries stated that if any such plans were developed that the institutions would learn of them through appropriate press releases. The present situation could have been largely avoided by prior planning and consultations with competent civil training personnel. Adoption of a long-range semipermanent training policy should be developed for the guidance of all concerned.

This forecast certainly proved to be correct, as the training programs referred to were allowed to phase out leaving many of the civil training institutions in dire financial straits. I think it will be obvious to all concerned that the civil institutions cannot endure under this turn-on and turn-off policy, which has been followed by the Air Force during World War II, and again repeated in connection with the Korean disturbance. The Air Force would be in difficulty if the civil institutions were not available when needed, yet their policy with respect to these institutions is destructive. I believe that if the Air Force would adopt a semipermanent policy of continuously training within contract institutions at least 25 percent of its going requirements, that the Air Force would benefit, the national economy would benefit, and a valuable national training resource would be preserved on a sound basis.

Now, may we consider the pilot training program? Enrollments for pilot training in the civil aviation schools have also suffered a serious reduction. The interest of American youth in air piloting is

first exhibited at the local airport level, and at this level we have recognized for some time that youth has lost the high degree of interest which it formerly had in flying careers. Recent newspaper publicity indicates that this loss of interest is now being felt by the military air services and that there is a serious dearth of cadet applicants.

Something must be done to renew the interest of American youth, and to instill in them the desire to enter upon aviation careers. Unfortunately, aviation education is expensive, and under present economic conditions, this is undoubtedy a serious factor in deterring many from entering aviation, particularly, again, when faced with the imminence of a call from Selective Service.

Military air services during peacetime have consistently belittled the value of flight training given in civilian type aircraft. Yet this is the type of aircraft with which young men first come in contact, and is the type which must be used in order to stimulate their latent desires for flying careers. This type of aircraft is also the most economical method for determining flying aptitude and ability. Every young male American who is a high school graduate and physically qualifie l is a potential air cadet, if we can arouse within him the desire to fly. This desire should be aroused, and his aptitude tested, by assigning him to a civilian school not too remotely located from his home, under a Government-sponsored program. A program of this type should be carried out prior to the acceptance of a young man into the military air service.

This, of course, would be in contrast to present military policy of accepting a man into the military service, transporting him to a relatively remote basic school, accepting responsibility for his maintenance over a period of several weeks, and then commencing flight training on expensive aircraft at high operational cost. The saving in cost is obvious.

In a report issued after World War II covering an analysis of cadet classes 43F, 43G, and 43H—these are Air Force classes—there is stated as follows:

> The Air Force recognizes the value of light aircraft flying as a screening device for selection of student pilots. The aviation psychology program produced some revealing statistics on the characteristics of our pilot trainees. In a cross section of 27,210 student pilots, it was discovered that an elimination rate of 4 percent was experienced amongst students who previously had held a commercial pilot's license. Five percent of those with a private pilot's license were eliminated; 9 percent of the student pilots who had soloed; 26 percent of the student pilots who had not soloed; 37 percent of those who had been only passengers in an aircraft; and 49 percent of those who had never previously flown. Consideration of these facts indicates that a closely supervised course of flight training designed specifically to determine the aptitude of the applicant for military flying would be highly beneficial. By process of selection of the most apt students, we believe the elimination rate currently experienced in our military flight curriculum can be reduced from approximately 43 percent to approximately 10 percent, or even less.

The value of the civil pilot training program, which commenced in 1939 and terminated in 1944, now appears to be a controversial matter with the military air services. If I may be permitted to do so, I would like to quote from pages 61 and 62 of the USAF Air Training Command Informational Bulletin, the summer issue 1951. While what I am going to quote may not necessarily be official Air Force policy, it obviously was considered worthy of publication:

> The passage of the Civilian Pilot Training Act of 1939 accelerated the schools' adjustment to the impact of the emerging air age. Since this act was concerned

with pilot training aspects of aviation education, it provides instruction in flying and its related subjects. Navigation, meteorology, power plants, aircraft structures, aircraft instruments, and aerodynamics were the courses prescribed. The object of the act did not relate to aviation's social impact. It was designed to meet an anticipated emergency by creating a supply of pilots. It was, in part, an answer to Germany's challenge for air supremacy, since she had previously issued an edict requiring the teaching of the essentials of aeronautics at all school levels, and had undertaken mass pilot training through the use of gliders.

The Civilian Pilot Training Act initiated the most comprehensive civilian pilot training program ever conducted by any nation. The program was successful. Ten thousand light plane pilots were trained during the first year. Even before Pearl Harbor, its graduates were enlisting in the United States Army Air Force at the rate of 1,000 per month; 75 percent of the RAF's Eagle Squadron were its graduates. Thousands of its graduates won military distinction during World War II. Many of these continued to serve commercial aviation. One result of the program in the public schools was the emphasis upon the so-called ground school aspects of pilot training instruction. This emphasis prevailed in both high schools and colleges until the spring of 1944. * * * From 1941 to 1945, during the course of its existence, the civilian pilot training program and its counterpart, the war training service of CAA, produced approximately 500,000 civil airmen. Its experimental year involved only 13 colleges and 331 students. However, by the time war was declared on Germany, pilot training had been provided for approximately 100,000 pilots. At the peak of its development it contracted with 884 colleges, 268 private schools, 195 high schools, 120 civic organizations, and 1,250 flight school operators.

At this point may I review for you some of the history of the original Civilian Pilot Training Act. In 1939 the Congress passed this act and during the first year 10,280 young Americans received their initial pilot training. The total cost of this training was $4 million. The program was renewed for the following year with an appropriation of $37 million under which 157,972 student pilots received training. However, in January 1941 both the Air Force and the Navy transmitted to President Roosevelt a memorandum condemning the civilian pilot training program as useless. This resulted in a Presidential recommendation in his budget message that CPT funds be cut from $37 million to $18 million. However, Congress, even then taking the initiative, actually appropriated $27 million. This cut resulted in the training of only 40,000 pilots during the year ending June 30, 1942. But then what happened? Before 1942 was over both the Army and the Navy recognized the critical need for civilian assistance and during the next fiscal year 111,140 pilots were CPT trained at a cost of $72 million. Furthermore, during the following year 215,676 pilots were trained. All this adds up to the fact that less than 1 year after the Air Corps and the Navy had condemned the civilian pilot training program they had created demands on it which required that the program output be increased five times over the previous year and the Air Corps and the Navy donated from their own budget funds a sum of nearly $98 million, after they had condemned the program as being useless.

Today we are apparently faced with a situation which in many aspects is similar to that with which we were faced in 1939; although in many aspects the current situation is much more serious as we are now militarily involved. In 1939 we were preparing to meet the German menace, and in 1952 we are preparing to meet the Russian menace. It is known today in certain Government quarters that Russia is embarked upon a widespread air-training program. While I personally know little about this program, may I call your attention to a United Press dispatch dated December 1, 1949, as follows:

ALL RUSSIA REPORTED TO BE NOW AIR-MINDED

Russia is making even the smallest, most remote village air-minded, and is amassing a flying reserve of such proportions that one British expert believes creation of a kamikaze corps is under way.

Soviet boys and girls now can learn to fly a plane as easily as most youths learn to drive a car, Maj. Gen. Richard Hilton, former British military attaché in Moscow, said.

DOSAV, the organization which sponsors this learn-to-fly campaign, is working on a tremendous scale far exceeding anything else done along this line in the world.

Gentlemen, we in the aviation industry who had experience with these problems during World War II, and who have made a profound study of the same problems again facing us, feel it is our patriotic duty to bring these matters to your attention, and to suggest a sound and sensible plan which will provide the solution to the problems. Legislation now being considered provides for the training of civilian personnel to meet the requirements of the civilian aviation industry. However, lacking any definitive manpower policies with respect to this specific industry, we cannot forecast the ultimate utilization of the skills to be provided by this legislation. Some of this skill may permanently remain in civil industry; and on the other hand, much of it may end up in the military services. The one thing of which we are sure is that there is, and will continue to be, an over-all shortage in the covered skills and that the only safe course to pursue under existing conditions, is the immediate activation of a plan which will take steps to increase the total national resource in each of these skilled categories. You have in your possession the CAA statistics indicating that unless something is done the civil training resources will disappear during 1952. If this catastrophe is permitted to occur, then the only available source for the staffing of the civilian aviation industry disappears; the military services no longer have available the civilian training assistance which they have found it necessary to use during the past two war emergencies; and there will remain no source for aviation training other than that existing within the Military Establishment.

Delay in taking action may well prove disastrous, as the known requirement now exists. There are indications that these problems are becoming widely recognized based on recent press comments and editorials, copies of which are attached to this submission and which we respectfully request be inserted in the record of these proceedings. I sincerely hope that the members of this committee will find the time to study these submissions.

Twelve years ago we had a plan, and it was working. Today, we have no plan in operation. If American air power is not to become a big umbrella without a base strong enough to support it, certain immediate corrective steps are required. The plan which we are advocating could not, even if passed today, be placed in operation before next fall. The results of that plan would not commence to alleviate the requirements of American mobilization until more than 1 year later, or in mid-1953. We solicit your earnest consideration of these problems and your favorable support of H. R. 7073 (by Mr. Beckworth) and H. R. 7074 (by Mr. Hinshaw).

Thank you.

(The attachments to Mr. Griffin's statement are as follows:)

Pilot Lack Alarms AF

[From San Antonio Evening News, San Antonio, Tex., Friday, January 11, 1952]

LESS THAN 500 AVAILABLE FOR KOREA SERVICE—HIGH LEVEL TALKS CONVENE IN EFFORT TO SOLVE PROBLEM

Washington, January 11—High-level conferences were held late Thursday in the Pentagon in an effort to solve the problem of an alarming shortage of Air Force pilots that has developed in the last few weeks, it was learned Friday.

There were reported to be fewer than 500 pilots available for service in Korea as replacements for flyers who would normally be returning under the rotation system.

The Air Force and Navy training schools have not been able to turn out sufficient graduates to keep up with the demands of our commitments for defense units in Europe and at home, in addition to the needs in Korea.

It is known that the Russians are aware of this situation and that this disclosure is therefore no leak of vital information.

The shortage of pilots is so serious that in many cases pilots returning from 2 years of duty in Europe have been sent as replacements to Korea after a short leave at home.

The sudden call-up of such baseball stars as Ted Williams and Jerry Coleman by the Marine Corps is attributed to the same urgent need for flyers. Both players are Marine pilots.

Pentagon officials replied "no comment" when questioned about the reported crisis.

[Editorial from Aviation Age, January 1952]

Error of Omission

A few months ago in this column we called attention to the growing and tremendous shortage of mechanics that is beginning to plague the industry. We cited facts and figures showing the alarming disproportion between graduates of mechanics' schools and the thousands of positions—both in industry, the airlines, and the military services—that are going begging for want of applicants.

On other occasions we have commented on the alarmingly low production of aircraft in the face of a disintegrating international situation and build-up of air power by the principal antagonist to our security.

The two facts are not unconnected. Indeed, they are rather closely related.

Planes are not now being produced in greater numbers due to reasons political and technical. Technically, today's military aircraft is far more complicated and, therefore, more costly in man-hours and money to produce than its World War II counterpart. To obtain the required performances necessary to meet the aeronautical accomplishments of our enemy, has meant not only improvements in basic airframe and power plant, but additional accessories and equipment.

Today's military aircraft has radar, control boosters, cabin heating and cooling equipment, automatic pilots, and a multitude of other accessories and equipment that add to its performance. They are all important. One of them—a radar gunsight—apparently makes the difference between whether the headlines report a MIG–15 or an F–86 has been shot down in Korea.

But to get these complicated machines we must pay a price—in more man-hours and more money. And so, fewer planes.

It's much the same story with tanks, guns and ships. All are more complicated and so their production consumes more man-hours and more technical competence.

For this reason, if we are called upon to fight in another war, we'd best count on having to make even a greater effort than was required of us in the last great conflict. If we do not make that effort, then we shall have to fight such a war with less—with fewer planes, fewer ships, fewer tanks, and guns.

And that brings us back to the mechanic. More than ever he becomes the keystone in the arch of our defense planning. He's important, not alone because he is required by a highly technical manufacturing industry, but because maintenance has a growing importance in military planning of the future.

To get the most of what we have in the way of military equipment, to keep it serviceable, we shall more and more have to repair quickly that which is worn and damaged. Where, in the last war, we so often resorted to repairing worn

and damaged equipment using average mechanical know-how, in future we shall require more specialized mechanical training to keep combat units operational.

To do that job will take trained manpower—master mechanics, electronic specialists, communications experts. And, as we pointed out in September, we're already running far short of training mechanics in aviation. From all we've seen or heard, neither the services nor the civilian agencies of Government are looking toward the developments of a great backlog of men trained to "keep 'em flying."

Let us for once—in a long history of errors of omission—do something about the problem before it becomes fatally acute.

[Editorial from the March issue of Flying]

What Has Happened to America's Youth?

(By Gill Robb Wilson, Editor and Publisher of Flying)

Has American aviation lost the American boy?

Five years ago the Civil Aeronautics Administration issued 193,000 student pilot permits. Last year the number had dwindled to 48,000.

In 1947 more than 120,000 private pilot licenses were issued to budding aviators. In 1951 the number was down to 23,800.

Can American airpower survive without youth? Are the foundations of American air supremacy crumbling?

In 1946 the aircraft industry produced 34,563 personal aircraft. Last year the number of such planes produced was shrunk to 2,250 and only 600 of these were one- and two-place light planes.

Almost every community of any size in the country has an airport or a flight strip. Airways and aids to cross country flying were never so numerous as now. Weather information is reaching continuously new high standards of accuracy and dependability. Regulations are not a barrier and safety devices have been stressed.

Yet in spite of these facts the number of certificated flying schools has dwindled in 5 years from 3,078 to 1,054. As late as last October 76 community flight-training schools closed their doors.

Reasons for these conditions are well known. The limited finances of youth can purchase less and less flight training due to high costs of planes, fuel, hangarage and instruction. The reservoir of youth which would seek training is absorbed in the program of universal military service.

Yet knowledge of the causes which undermine American airpower at its source—American youth—is not a remedy for the condition.

It is well and good to note that personal aircraft are finding an increasing market in agriculture and in corporation activities. This is a major contribution to the total of national airpower.

But it is not the answer to the dwindling volume of youth flowing into American aviation.

Simplification and economy of the helicopter will in time make it a vehicle of private transportation.

But again this is not the answer to the scarcity of the American boy and girl on thousands of community airports and flight strips.

Public education is increasingly stressing the importance of aviation in its efforts to adjust youth to the problems of the modern world. But once more this does not provide the answer to the depopulation of community airports and the increase of hot rods on the highways.

The writer lays censure at the door of none but poses the question: "Have we taken our eye off the boy?" In our search for airpower to keep us secure, to raise our standard of life and to chase the flickering light of a brave free world, have we crowded the youngster out of the sky?

At this question the leadership of the United States must take a long hard look. Our community airports are sterile of youth. Is this healthy? Is it wise? Is it safe?

[From the Boston Traveler, April 16, 1952]

GENERAL SPAATZ SEES CRITICAL SHORTAGE OF UNITED STATES YOUNGSTERS WHO WANT TO FLY

WASHINGTON (AP)—Retired Gen. Carl A. Spaatz says the Nation is dangerously short of youngsters who want to fly.

The former chief of the United States Air Force said demands by youths for flying instruction are critically below the level needed to sustain a major air power. Writing in Flying magazine, he called this alarming.

Spaatz blamed slackened interest on the loss of "a whole generation of air-minded teen-agers who, too young for service in World War II, were rather abruptly brushed off."

"That situation can never be quite corrected," said Spaatz, now chairman of the national executive board of the Civil Air Patrol.

"These young people of World War II have now outgrown the golden age in the making of an aviator—the 'teens.'"

Spaatz said the inclination to fly, on the part of the lost generation of too-young hopefuls, sacrificed to the wartime effort to build a fighting air force of 350,000 planes and 250,000 pilots.

The United States in 1946 and 1947 began to experience difficulty in filling even small quotas for aviation cadet classes, "in an unheard-of condition heretofore," Spaatz said.

[Editorial from Boston Herald, April 17, 1952]

A NATIONAL TRAGEDY

The dramatic refusal of a few Air Force pilots to fly has caught the imagination of the public, but the fundamental cause of their revolt is far more serious than the cases of the isolated few who have quit.

The pilots are members of a military organization. They will fly or be court-martialed. That is the way the system works, civilian sympathy notwithstanding.

The astonishing thing is that this is the first time in the history of the Air Force that pilots have been forced to fly. Even in the darkest days of World War II the Air Corps followed the policy that a man responsible for air command and the control of valuable aircraft should not be trusted aloft if he expressed his desire to quit flying. They reasoned that if his fear or weariness was enough that he was willing to request relief in the face of the public opinion of those around him who were flying, then he was not to be trusted with the complicated job of flying a plane—a task on which other lives depended. He would be reassigned to other combat duties and might even go to the infantry but he would not fly.

Now that is changed. Pilots that are too old, reservists who have lost their youthful coordination and desire to fly, pilots who are cracking up or are psychological risks aloft, will be forced to fly. They will have a choice of going up or facing court-martial.

Their plight—and the Nation's—is the direct result of the administration and Air Force failure to train pilots. And the situation was not merely one which we relaxed into after V-J day. It is a condition which exists at the present moment—almost 2 years after the Korean war began.

Today it is estimated that we are only training one-tenth of the pilots that we were before Pearl Harbor.

This tragic shortage—as serious as the lack of production of new planes—is leaving America weak when it should be strong. We cannot train pilots overnight and we are not even starting to train them now. The tragic fact seems to be that the pilots who are complaining about flying now will still be the backbone of our Air Force in 1953, 1954, and perhaps longer. It is a tragedy for them—and for the Nation.

[From the Washington (D. C.) Times-Herald, Tuesday, April 22, 1952]

Air Force, Navy Brass Admit Critical Shortage of Pilots

High brass at the Pentagon today admitted a critical shortage of more than 5,000 young pilots needed for the 143-wing Air Force and the Navy's flying squadrons.

The generals and the admirals don't know where to get the youngsters. They think they soon may be getting hot-rod jet jobs from the plane producers faster than they can get men to fly them.

Already the Air Force has knocked off its educational requirements of 2 years in college—maintained even during World War II—and is searching the ranks of volunteer enlisted men for pilot cadets.

Last year the Air Force commissioned 1,913 pilots. This year the Air Force thinks it can turn out 7,200 men with wings.

That isn't enough. A top ranking planner in the Air Force said they need 1,100 pilots a month right now if the service is to meet the demands of the Korean war and the expansion which has been going on since the cold fight got warm.

There appears to be little coordination between the rate of pilot training and the stepped-up production of aircraft. This situation will be explored in hearings before the Senate preparedness subcommittee starting today. General Spaatz (retired) former air chief of staff, will be the first witness.

The Navy has a big headache. Last August it was decided that 160 men per month should be started into flight training. Since then, the Navy has had an average of 138 men available.

When the speed-up program started, the Navy had a backlog of 540 cadets on the waiting list. Last month they had 50. Now they have none.

The reluctance to fly is getting worse. The Navy said that out of 777 men slated to graduate from Annapolis in June, 484 have qualified for flight training. But of these, only 207 have "expressed a desire to fly."

As of now, the Navy is getting less than 60 percent of the men needed monthly to meet flight requirements.

The plain fact is the United States does not have and is not getting pilots to fly the planes needed for defense of the country, much less fight a big-scale war.

That's why the Air Force had to recall 14,000 Reserve pilots since the Korean fighting started and why thousands of other retreads will see action if there is a major war in the next 2 or 3 years.

What worries the flying brass is not so much the current pilot shortage as the reluctance of young men to get into flying as a career.

CIVIL PILOT RESOURCE IN THE CRITICAL-AGE GROUP

(From Civil Aeronautics Administration Statistics)

The critical-age group as related to flying skills can be considered as the 16-to-20-year group, particularly in view of the 10-year base on which mobilization is being predicated as per President Truman's statement to Aviation Development Advisory Committee, White House meeting, July 1950.

AS OF JULY 1950

(From CAA statistics)

900 (approximate) persons (male and female) held student permits in 16–18-year group.

11,400 fell in the 18–20-year group holding the following certificates:

Commercial pilot

Private pilot

Student pilot, which were composed of—

Solo students, students still in dual stage, some never flown

Of these above 11,400 some have already been drafted, some have enlisted, and others were already in uniform as of July 1950.

Others are preparing for vital skills which would in any event supersede their flight skills in importance (medical, electronic, etc.).

Still others in the student and private group while able to fly in this category undoubtedly are not of military-flying qualification, physically or mentally.

* * * * * * *

This situation has not improved in the past 20 months.

Note.—An age group analysis later than July 1950, is not found to be available.

Mr. BECKWORTH. Mr. Dolliver?

Mr. DOLLIVER. As I listened to your statement and your review of the situation as it now exists, you attribute the lack of supply of pilots and skilled personnel in the aviation industry to the decrease in the interest of the young men, and also the fact that civilian pilot training has been abandoned. Is that it?

Mr. GRIFFIN. The present shortage was produced by the increasing growth of all segments of aviation, which has used up the reserve which we formerly had. The young men who start work in aviation generally start work at the grass-roots level, and they upgrade themselves by moving on into the larger and corporate set-ups. They leave the grass roots and work up through a system of personal betterment. That process can continue only up to a point, and then if you fail at that time to have the normal input of new blood seeking entrance into the industry, the pipeline goes dry.

Mr. DOLLIVER. The situation has arisen in recent years, has it not? The pipeline has gone dry?

Mr. GRIFFIN. Yes, sir.

Mr. DOLLIVER. Now, is that attributable, in your judgment, to the fact as mentioned by Colonel Denny here, I think while you were in the room, that there has been a loss of attractiveness of the field as something for young men to go into?

Mr. GRIFFIN. Yes, sir.

Mr. DOLLIVER. And what has been the cause of that loss of attractiveness, if you are able to identify it?

Mr. GRIFFIN. Sir, I think there are several reasons. I think some of it is psychological, and some of it is practical.

No. 1, a great many young men returning from war service after the last fracas failed to secure employment and to be able to use the skills that they had acquired in the services.

Mr. DOLLIVER. Whose fault was that?

Mr. GRIFFIN. I think that a lot of them came out with false impressions as to their employability with the training they had received, and they did desire to secure employment in civil aviation, but found themselves unacceptable. And over and above that, at that time the aviation industry was in the throes of converting back from a wartime economy to a civilian economy, and was in a state of chaos, during which airplanes were not available to them. New stuff was not coming off the line with a rate of build-up which could support a larger number of men than actually were absorbed. During the period of increase, it is obvious that in the meantime many of those returning from the service gave up in disgust and entered other employment.

Mr. DOLLIVER. What about this loss of attractiveness to the young men? Let me make this comment on that: I have had a little personal experience with it myself. I know that during the World War II days, it was the desire of many, many of our brightest young men to go into aviation, either naval or the Air Force. And many, many of them did. And why is it that this present generation, a short 10 years later, is not interested in it? What has happened to the industry? What has happened to the attractiveness of the field? Can you give your answer to that?

Mr. GRIFFIN. Not specifically; no, sir. It exists.

Mr. DENNY. Will the gentleman yield?

Mr. DOLLIVER. Yes; I will yield.

Mr. DENNY. I think this is a splendid statement, Mr. Griffin.

Mr. GRIFFIN. Thank you, sir.

Mr. DENNY. It seems to me that because we had such a splendid supply of pilots at that time we completely forgot about the younger boys in school and we forgot about feeding the glamor to them that could have been fed to them to continue the development of pilots; that for a long time we did not have to do that, and that we forgot all about it. What do you think about that?

Mr. GRIFFIN. I think that is largely true, sir. And I think that discouragement has a big bearing on the situation.

For instance, let me give you an idea of the number of Air Force cadets who were graduated in the years since World War II. In 1946 they trained 416 pilots; in 1947 they trained 509 pilots; in 1948 they trained 836 pilots; in 1949 they trained 1,023; and in 1950 they trained 1,908. Of all the applications received from throughout the United States, that is the total number of new cadets that were created within the Air Force. Now, had there been any backlog, obviously most of them would not have been accepted as cadet applicants and would have completely lost interest.

Mr. BECKWORTH. Will the gentleman yield?

I think the discussion along the line that we are having is right to the point.

Just assume that we were not in trouble today, and that we had more pilots than we need today, all kinds of pilots, civilian pilots, Air Force pilots, and naval pilots, that really would not obviate the necessity for this legislation: It still would be necessary. Why? The important thing is not how many pilots we have at this particular moment, but whether or not we are bringing out a new crop annually that could take care of any need, however great, that might develop. In my opinion the purpose of this legislation is to seek that kind of objective and see that kind of objective through.

I want to go one step further: to rely on just what the Air Force needs at any given time is in my opinion a mistake. And why do I say that? Assume that we get this trouble that we are in over with in Korea, one of the immediate dispositions would be to cut back on all military spending—that is certainly a disposition of the American people. Conceivably in a time like that, when we actually did cut billions of dollars from our military appropriations, in a time like that legislation of this type of a permanent character might come into effect and have its most significant and meaningful effect. Why? Because it would be hoped that we would not cut back that kind of program but would continue to carry it on, so that we at all times would have whatever reservoir or whatever backlog was needed for any and all purposes.

Mr. GRIFFIN. Yes, sir; I thoroughly agree with you. And that is just what happened here. We cut back to where there was no incentive for anyone to enter aviation as a career.

Mr. HINSHAW. If the gentleman from Ohio will yield to me briefly, I will point out the fact that while it is well known in all services that the original pilot training should be given to a youth somewhere between the ages of 18 and 21 years, in order to make him available, it is likewise well known or should be to the Air Force that they do not want any new original cadets or trainees who are over 26 years of

age. As soon as you cut back from the training of the youth, you reduce the reservoir from which they can obtain young, able flyers. At the present time one of the great things that the Air Force is suffering from is the fact that they have to go into the Reserves and take pilots that are from 28 to 35 years old, instead of being able to have young men available in similar quantities that they can take into the service and give some retraining or new training or additional training and, as hot pilots, then go in and fly the hot aircraft. That is one of the great difficulties that the Air Force and the Navy both are having, and yet they refuse to recognize it, just as they did in 1939 and 1940. They do not know what is the matter, but they will soon find out, I hope.

Mr. DOLLIVER. I would just like to go back to those statistics you quoted. What was the last year?

Mr. GRIFFIN. The number of cadets?

Mr. DOLLIVER. The number of cadets.

Mr. GRIFFIN. 1950; and the number was 1,908.

Mr. DOLLIVER. Well, those statistics indicate that there has been a considerable increase over the past 4 or 5 years, up to 1950.

Mr. GRIFFIN. Yes, sir; there has been a slow, steady increase.

Mr. DOLLIVER. A slow and steady increase. And you perhaps do not have or do not want to reveal the statistics for 1951 and 1952, but I think perhaps it is fair to assume that there has been a further increase in those years.

Mr. GRIFFIN. Yes, sir; there has.

Mr. DOLLIVER. And that has been done through the Air Force; has it not?

Mr. GRIFFIN. Yes, sir.

Mr. DOLLIVER. Now, in your opinion, there is no comparable program for the training of civilian flyers?

Mr. GRIFFIN. That is correct, sir.

Mr. DOLLIVER. Do you have any estimate or any statistics on how many pilots are being trained civilly at the present time in schools, and so on?

Mr. GRIFFIN. No, sir; I do not. I do not have those with me. They are available to me, but I do not have them at the moment. I did not bring them in.

Mr. DOLLIVER. If they are available, Mr. Chairman, I would like to have them included in the record at this time.

Mr. GRIFFIN. I will see that you get them, sir.

Mr. DOLLIVER. And include in that not only the pilots but the mechanics, and so, and the ground crews.

Mr. BECKWORTH. Without objection, that will be done.

(The information referred to is as follows:)

DEPARTMENT OF COMMERCE,
CIVIL AERONAUTICS ADMINISTRATION,
Washington 25, May 23, 1952.

COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
New House Office Building, Washington 25, D. C.
(Attention: Mr. Painter.)

DEAR MR. PAINTER: Mr. John T. Griffin, president, and Mr. Charles A. Parker, executive director of the National Aviation Trades Association, have requested this office to furnish you with some information in connection with the hearings on bills H. R. 7073 and H. R. 7074.

Mr. Griffin was questioned relative to the number of civilian pilots currently undergoing training. This information is not available. However, our records

indicate that during 1951 there were 44,599 student-pilot certificates issued.* Our records further indicate that only 11,176 of this number have progressed to private-pilot certificates.

I trust that this information will be helpful to the committee.

Sincerely yours,

WILEY R. WRIGHT,
Director, Office of Aviation Development.

Mr. GRIFFIN. The latest statistics on mechanics are contained in that CAA release which you have, sir.

If I may, may I point out one factor to you in connection with your question? That is that the vast majority of all the pilots remaining in the flight schools today are still there under the GI bill, and there again we are still training veterans.

Now, one of the submissions attached to my presentation here is a CAA statistical report dated, I believe, July 1950, the last figures that are available insofar as pilot trainees by age brackets are concerned. And that statistical report, the last available, will reveal to you, I believe, the seriousness of the situation as far back as that. And that situation has deteriorated further since, I am sure, although it would be unprovable until the next statistical analysis is made.

Mr. DOLLIVER. I think that is all, Mr. Chairman.

Thank you.

Mr. DENNY. Mr. Chairman, I have one more observation. In the years in the thirties we must remember there were fewer children born, because many could not afford to have them, if you will remember.

Mr. GRIFFIN. Yes, sir.

Mr. DENNY. So that we may have a shortage for that reason for the next 2 or 3 years. Because it is only 20 years from 1932.

Mr. GRIFFIN. Yes, sir; that is true, but it still stands that we are not getting the same pro rata interest.

Mr. DENNY. No. That is right.

Mr. HINSHAW. Now, Mr. Chairman, I assume that the witness would like to have his addenda to his statement, which are bound with the statement, included in the record. They are mostly articles and excerpts from articles, and I ask unanimous consent that they be placed in the record.

Mr. BECKWORTH. Without objection, they may be included as part of Mr. Griffin's statement.

Mr. HINSHAW. I would like to quote from one of them, an article from the Times-Herald of April 22, 1952, which is quite recent, in which it points out that last year the Air Force commissioned 1,913 pilots. This year the Air Force thinks it can turn out 7,200 men with wings. But that is not enough.

*A top-ranking planner in the Air Force said they need 1,100 pilots a month right now if the service is to meet the demands of the Korean war and the expansion which has been going on since the cold fight got warm.

In other words, as I understand it, the present program for turning out new graduated pilots is far below the needs of the Air Force if it intends to expand to the 143 wings contemplated, plus the Navy's flight organization.

I wonder whether a figure close to fifteen or twenty thousand per year would be closer to the facts, in view of the fact that these pilots cannot be ready for flying in combat for something like 2 years at least.

Mr. GRIFFIN. Are you asking me a question, sir?

Mr. HINSHAW. Yes. You were part of this, and I wonder whether you would be able to give us that information?

Mr. GRIFFIN. Prior to coming in, I tried to get the restriction on that report lifted and was unable to do so. In my opinion, the present pilot rate within the military services is inadequate to meet the planned build-up.

Mr. HINSHAW. That is my impression after talking with a number of people in the Armed Forces.

They are quite concerned over the fact that we are flying old pilots in new planes against young pilots in new planes at the present time.

Mr. GRIFFIN. It has been publicized, so I think it is O. K. to say here that by Air Force criteria for fighter-aircraft pilots their own upper bracket is the twenty-sixth birthday, whereas I think they have admitted in the public press that the average age of their combat pilots is now in excess of 30 years.

Mr. HINSHAW. That is my understanding of it. And, of course, as has been well pointed out elsewhere, as a pilot becomes older, he naturally expects some increase in rank, and in due course he, in effect, graduates from the hot pilot group into something less than that. One of the greatest complaints I have found in the Marine Corps aviation is that they continue to have to fly these hot aircraft until they are something like 50 years old, which is just a little old for flying hot aircraft, and that the boys with the real zip to them are the ones from 21 to 26, who have no family obligations as yet, or such obligations are only in the hoped-for stage, and they were the kind who were the hot pilots in World War II. They were the group from which people like Eddie Rickenbacker and others came in 1917 and 1918. They were really the fly-boys of their time. After they reached the age of 30 or 35, they were willing to sit down at a desk job some place and either do training of young pilots or administrative work or anything else, and were glad to get out of the hot seat. I think that is something that has got to be realized in the Pentagon.

Mr. GRIFFIN. Another important factor, sir, is the fact of the tremendous cost of training an aviation cadet today. And with the criteria contained in Air Force regulations, I suppose you would call them, right now, if they hope to obtain maximum benefit through the expenditure of that cost for training any individual, it is certainly to their advantage to get him at as young an age as possible.

Mr. HINSHAW. If I may be permitted to do so, Mr. Chairman, I would like to hearken back to 1947, the date when the gentleman from New Jersey and I served on the Congressional Aviation Policy Board, to which Gen. H. H. "Hap" Arnold and Admiral Jack Towers were advisers. The alternate to General Arnold was Maj. Gen. Hugh Knerr, who shortly thereafter became Inspector General of the Air Force, and the alternate to Admiral Towers was Rear Admiral Arthur C. Davis, who is now Vice Admiral Arthur C. Davis and I believe is assigned to the NATO forces. It was the very strong opinion of those gentlemen, expressed both privately and in meeting, that one of the worst mistakes that the armed services could make was to neglect the youth training in America in aviation; whether or not they ever should serve in the Armed Forces, that their knowledge of flying or its various corollaries would stand the country in the greatest possible good in the future.

And yet very shortly after the demise in the Air Force and the Navy of that older long experienced group, all of that knowledge seems to have fallen away to nothing. I do not know what has happened in the Armed Services, but they seem to have forgotten all of the great long build-up that was necessary to build those services to the eminence and abilities which they achieved in World War II.

The lapse of interest displayed by the military forces in civil aviation since that time is, in my humble opinion, very largely responsible for the position in which they find themselves, and consequently the country.

Mr. GRIFFIN. If I may add one more point to my answer to Mr. Dolliver, one of the reasons which has some unmeasured effect on the decline in enrollments in the aviation school is, of course, again I would like to repeat, the cost. It is expensive, considering the length of the training term. It is expensive education.

Mr. DOLLIVER. May I make another inquiry at that point?

Are there any schools of college grade that offer pilot training that you know of in the United States? I mean aside from the service schools.

Mr. MACK. Will the gentleman yield to me?

I think you will find there are some of our State universities in the various States that do have the educational-training program to which you refer. I know that is true at the University of Illinois.

Mr. GRIFFIN. The University of Tennessee, for instance, is just installing one. But that does not reduce the cost of it substantially.

Mr. DOLLIVER. No, I understand that. But I just wondered if, as a possible addendum to your statement, it could be stated whether that was sometimes included in the curriculum of a school of higher education, so called.

Mr. GRIFFIN. Yes, sir, a few colleges and universities do have it.

Mr. DOLLIVER. That is all, Mr. Chairman.

Mr. MACK. Mr. Chairman, I found this statement very interesting. I trust that your figures are reliable.

Mr. GRIFFIN. I hope so, sir.

Mr. MACK. If so, they are extremely interesting to me.

In the first place, I know of the interest that CPT created in 1939 and 1940 and 1941, and I am so convinced that it was a fact at the time that I feel that the Air Force and the Navy Air could take the recruiting money today and invest it in this type of a program and be as successful in getting new recruits as they are under their present recruiting program. I make that statement because I was fortunate enough to have a CPT training program back in 1940, and I know of the interest that was created not only within my own family but among my friends and among the people in the class with me at that time. I think it was terrific. I know that many of the operators bragged about the number of graduates who had enlisted in the air services of our country. And that was prior to World War II. So you can understand my complete amazement at this statement which has been included in your statement here, regarding the announcement in January of 1941, when both the Air Force and the Navy transmitted a memorandum to the President condemning the civilian pilot training as useless. I feel it was extremely successful, and your figures indicate the large number of young men that were trained under that program at that time.

Mr. GRIFFIN. Yes, sir.

Mr. MACK. I cannot help but feel that it was extremely successful and did contribute substantially in recruiting men into the military services in 1941. And I must admit that I was one of the few students in my class who did not enter the military services. I think 8 out of 10 went into the military services prior to World War II.

I did want to ask you also about the number of students who had been eliminated from the military training programs today. I understand there are about 43 to 49 percent that are being eliminated, without having previous training.

Mr. GRIFFIN. Yes, sir; those are Air Force statistics. Those are World War II statistics.

Mr. MACK. There is quite a differential there in the statistics as you gave them to us from this Air Force report, which went from 5 percent up to 49 percent——

Mr. GRIFFIN. Yes, sir.

Mr. MACK. And of those 49 percent, without previous training, it was undoubtedly very expensive to give them whatever training they had before they were eliminated.

Mr. GRIFFIN. Extremely expensive, sir.

Mr. MACK. And my question to you is: Do you have any idea of the type of planes you used in this program and the type used presently for elementary or primary training in the Air Force, and the operating costs involved?

Mr. GRIFFIN. Naturally, I do not know the Air Force figure, because it is extremely difficult to get, but I think that it is generally admitted that the operating cost on a T–6, which is the initial aircraft used today, is $50 an hour or more; whereas the cost of conducting this preliminary phase in flying training in aircraft of the type we are discussing in the civilian schools would be not over $15 an hour.

Mr. MACK. That is a sizable difference in expense of training the students.

Mr. GRIFFIN. Yes, sir. it would save millions of dollars.

Mr. MACK. Does that take into account also the replacement of the airplanes?

Mr. GRIFFIN. No, sir.

Of course, a lot of washouts involve replacing the airplane as well as the cadet. And to replace a T–6 today would cost, I would say conservatively, at least $50,000, whereas to replace the counterpart in the civilian airplane would cost not over $5,000.

Mr. MACK. I think that there is a substantial saving involved, and I know that all of my colleagues share my interest in economy. We certainly should look into the matter of using some type of program similar to the one that has been suggested.

Now, Mr. Griffin, I understand you are a pilot.

Mr. GRIFFIN. Yes, sir.

Mr. MACK. And that you have flown many different types of airplanes.

Mr. GRIFFIN. Yes, sir.

Mr. MACK. Well, now, I made a statement the other day regarding the various types of airplanes, and I stated that aerodynamically they all operated the same, and that the training in one type of airplane would be beneficial to a student when taking training in some other type of plane.

Do you share that feeling with me?

Mr. GRIFFIN. I certainly do, sir. I disagree with anyone who claims that any part of his time that a man spends flying is not valuable experience, regardless of the type of aircraft involved.

Transition time, change from one aircraft to another, is relatively short, once the principles of flying have been thoroughly mastered.

Mr. MACK. Transition is principally a cockpit procedure process to go through; is that not correct?

Mr. GRIFFIN. Normally that is true, because it is only the unusual case where a man is expected to jump, in one jump, from the lightest aircraft to the heaviest type.

Mr. MACK. I wanted to make this statement for the record.

Personally, I have had considerable experience in aviation. I have flown probably the lightest planes and some very heavy aircraft of various types of fighters, including jets and medium bombers, and I feel that the basic understanding, the basic knowledge of aviation, is beneficial, and that it qualifies one to fly other types of aircraft, having that background.

I am fully aware of some of the procedures in the military, but I know that transition is overplayed, and that if you have the basic understanding, if you have the ability to fly, if you have the training background, I do not believe that a skilled pilot will kill himself when he gets into a new airplane.

Mr. GRIFFIN. I thoroughly agree with you, sir.

Mr. BECKWORTH. Are there any other questions?

Thank you very much.

The committee will adjourn until 10 o'clock in the morning.

(Whereupon, at 4 p. m., Tuesday, April 29, 1952, the hearing was adjourned, to reconvene Wednesday, April 30, 1952, at 10 a. m.)

CIVILIAN AVIATION PERSONNEL TRAINING

WEDNESDAY, APRIL 30, 1952

HOUSE OF REPRESENTATIVES,
COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
Washington, D. C.

The committee met at 10 a. m., Hon. Peter F. Mack, Jr., presiding.

Mr. MACK. The committee will please be in order. We shall continue hearings on H. R. 7073 and 7074.

The first witness this morning will be Charles O. Cary, Deputy Administrator, Defense Air Transportation Administration.

STATEMENT OF CHARLES O. CARY, DEPUTY ADMINISTRATOR, DEFENSE AIR TRANSPORTATION ADMINISTRATION

Mr. CARY. Mr. Chairman and gentlemen:

My name is Charles O. Cary. I am Deputy Administrator of the Defense Air Transportation Administration. I am also the Executive Secretary of the Air Coordinating Committee and served as General Secretary of the National Security Resources Board Air Transport Mobilization Survey.

The Defense Air Transportation Administration has the responsibility for assuring the adequacy and effective utilization of air transportation facilities and services to meet the needs of national defense and of domestic and foreign commerce. In this connection it is my responsibility, through the Defense Air Transportation Administration, to plan and direct the mobilization of civil aviation resources and facilities.

The basic point of departure for this activity is set forth in the National Security Resources Board Air Transport Mobilization Survey completed August 24, 1951. These reports contained major conclusions and recommendations made by the various task groups for the mobilization of civil air transportation. Over 100 outstanding men representing all phases of the civil aviation industry and the Government, including the armed services, prepared these reports. Most of these recommendations have been implemented and action has been started on others. As a result of the implementation of these recommendations, a joint agreement between the Secretary of Commerce and the Secretary of Defense, specifying the requirements for the Civil Reserve Air Fleet to be available on 48 hours' notice, has been signed. The action agents under this program are the Secretary of the Air Force for the Department of Defense and the Administrator of Defense Air Transportation Administration for the Department of Commerce. This established a close working relationship between the civil and the military branches of the Government in regard to the mobilization of civil aviation. The Civil Reserve Air Fleet plan has

established known M-day requirements for flight crews to operate this fleet. For further implementation of these plans, work has been started on the modification of the first of 331 4-engined aircraft to be allocated to military air lift on 48 hours' notice.

Based on a requirement of 100 hours per flight crew per month, three and a half crews per aircraft will be needed as a minimum. Each crew will consist of two qualified pilots, a flight engineer and a navigator. Therefore, the minimum requirement for pilots alone to operate this fleet is 2,534. I might emphasize that these crew requirements are minimum requirements. It is possible that there will be required more than two pilots in some instances.

A further plan which is in the process of being implemented concerns the service pattern which will be operated by the remaining civil air transport fleet. This service will support the health, welfare, and production requirements and provide the civil airlift necessary to a war economy in the United States. Current daily utilization of aircraft in the scheduled air transport industry is 8 hours per plane In war time, to offset the losses to the civil reserve air fleet, it will be desirable and possible to raise this average daily utilization to 12 hours per plane per day. There would thereby be created an immediate need for a 50-percent increase in man-hours of labor. In terms of additional pilots, it means the industry will need 3,678 additional pilots. This figure will be increased due to the availability of new aircraft and the delivery of these aircraft which have been ordered and will be delivered to the industry during the next 3 years.

The entire air transport industry employs approximately 100,000 persons. Of these, 35,000 are in skilled classifications—pilots and other crew members. A 50-percent increase in man-hours of labor in these skilled classifications will require approximately 17,500 additional persons.

The foregoing figures have not included the eventual loss of a great many of these skilled personnel to the armed services. The recall of such reservists and the draft would result in a proportionate reduction of services which could be rendered under M-day conditions.

The civil reserve air fleet plan calls for the allocation of 331 specified four-engine aircraft presently owned and operated by the commercial airlines to the Department of Defense for use within 48 hours of M-day. Manpower must be available to operate not only the civil reserve air fleet, which will be under military control, but also to operate the remaining commercial aircraft on a basis of increased utilization. These latter aircraft will provide the air transportation necessary to maintain a high level of war production and to transport national interest and national defense traffic.

The modification of these 331 aircraft is scheduled for completion in approximately 1 year. It is, therefore, necessary along with this program, which has already committed the expenditure of several million dollars of Department of Defense funds or the purpose of supplementing military airlift capacity, to also implement a program designed to provide the skilled manpower required to operate this fleet in accordance with the agreement between Defense and Commerce.

The solution for this shortage of airmen is to increase the total available quantity of skilled personnel. The necessity for additional training to meet these emergency requirements is clear.

Although it has not been possible for the Defense Air Transportation Administration to present to this committee a completed program for the solution of the critical manpower problem which will confront the aviation industry on M-day, I hope that the presentation of the facts—facts which are not optimistic—has served in some measure to indicate the importance of providing a sound reserve of trained manpower to back up the civil reserve air fleet and to enable us to obtain maximum utilization of our civil air power during time of war.

Thank you, gentlemen.

Mr. HINSHAW. Mr. Cary, in connection with the last statement which you made, has the organization which you represent here, or any of those with which you are connected in the Government, arrived at any conclusions as to how this additional skilled manpower might be provided and made available?

Mr. CARY. No; we have not, Mr. Hinshaw. The problem is a very real one, one which has been troubling us for some time. The difficulties unfortunately are fairly numerous. Basically we do not have a reserve of people who have the skills and the ability, to whom we can go and call upon in an emergency.

Our big problem has been to develop some way of having available these people, with the background and the training that are necessary, who could be called upon when this increased utilization goes into effect. At the same time there is no means of employing them, at least immediately, that we can offer, other than in the reserve forces of the military services.

That being one of the basic problems, we have not had a real solution to the problem. I think it is largely an economic problem. We know what needs to be done. We know what is necessary as far as the training is concerned, as far as the types of individuals that are required and the skills that are necessary and how those skills can be acquired. As to that, there is no great problem. The problem is purely an economic problem; how can you keep those skills available? How can you employ those people so that they will be current in their abilities and in their background?

Mr. HINSHAW. Obviously, if you have aircraft both in the defense set-up and the civilian set-up, you have to have people to operate and maintain them. Otherwise the plans for M-day are certainly nullified to the extent that you do not have personnel?

Mr. CARY. That is correct.

Mr. HINSHAW. Therefore the personnel question becomes just as important as the aircraft problem.

Mr. CARY. Absolutely. The problem of having enough aircraft available to meet military requirements can be solved, because the aircraft are in being; they are operating today, they are available. As soon as you increase the utilization of those aircraft both for the military and the civilian, then we need more people to operate them. That is the problem. There is no point in having the aircraft if you do not have the trained personnel to fly them and to keep them in operating condition.

Mr. HINSHAW. Has consideration been given to that problem to the point where any conclusions have been reached?

Mr. CARY. No; I am afraid we do not have any conclusions. Mr. Faught, who is here, is the Director of the General Aviation Division

of the Defense Air Transportation Administration, and has been working on the problem. I might ask him, if it is agreeable, Mr. Chairman, if he has any comment on that.

Mr. MACK. Will you state your name for the purpose of the record?

Mr. FAUGHT. C. K. Faught, Director, General Aviation Division of the Defense Air Transportation Administration.

The program we are trying to conceive of is one to which the legislation before your committee may be a partial solution.

Mr. HINSHAW. You say that it would be a partial solution?

Mr. FAUGHT. Yes, sir. The solution, of course, is to increase the total number of skilled personnel in aviation. These people will be absorbed in the field of general aviation as they are trained. If the programs were to start within the next year, it would be a year and a half before they would complete their training and would be absorbed in the commercial field of general aviation where they would have to get the necessary additional experience to be upgraded in the industry.

Mr. HINSHAW. That is all.

Mr. CHENOWETH. I am a little at a loss to understand why there should be such a shortage of trained personnel to operate these planes. These planes are all being operated now, are they not?

Mr. CARY. Yes, sir.

Mr. CHENOWETH. Why could not the same personnel be used, then?

Mr. CARY. They could, except for this problem: The aircraft are operating today on an average of 8 hours, and as we increase the flight time, we will need more personnel for those planes.

In other words, during a time of war, the planes that will be allocated to the military, of course, will operate under their direction and in excess of 8 hours a day. The planes that will remain with the civilian operators would provide air transportation within the United States on a basis comparable to what we have during peacetime and to do that, those aircraft must operate practically around the clock, except when they are out of service for purposes of maintenance.

The air carriers would schedule planes, for instance, so that they would leave at 2 a. m., which would be perhaps an inconvenient time during peacetime but which they would have to do in order to get the necessary airlift. In order to get the necessary airlift the planes would have to operate for a longer period of time every day. But you can fly your pilots only a certain amount of time per month. As soon as you increase the number of hours, you need additional pilots and crew members to take care of the additional operational hours each day.

The same is true of your maintenance personnel. The planes will come up for overhaul on a more rapid schedule, for major overhauls and also the daily routine checks and maintenance.

Mr. CHENOWETH. With reference to the 331 planes that you intend to convert or to modify will those be allocated to the Air Force or will they be continued in civilian use?

Mr. CARY. The 331 would be available for use by the military. Actually they will be turned over to the Department of Defense, or the Secretary of the Air Force acting for the Department of Defense. They would be operating with civilian crews under contract but at the direction of the Defense Department and they would fly whatever missions the military thought were necessary.

Mr. CHENOWETH. And those would be the same crews who are operating them now?

Mr. CARY. That is correct.

Mr. CHENOWETH. If you are going to take that number of planes out of commercial operation it is obvious that you are not going to be able to maintain the present air schedules in this country. I think we have to recognize the fact that commercial service is going to suffer if we go into an all-out mobilization.

Mr. CARY. I think it will suffer from the standpoint of the convenience of scheduling, but not from the quantitative standpoint. We will still be able to produce the same number of plane-miles, or passenger-miles, that we do today. We will not be able to operate at convenient times. The assumption is that people who will want to travel by air during the war, will be willing to travel at whatever hours the space is available.

Mr. CHENOWETH. Has it not been true that up to this time many young men who have been anxious to get training as pilots have been denied that opportunity by the Air Force either because of lack of facilities, or because of standards which the young men have been unable to meet? Is that true or not?

Mr. CARY. I am not familiar with the Air Force problems on recruiting personnel. I think that in the past it has been true that there have been people who, for physical reasons, were unable to obtain training. I do not know what the situation of the Air Force is today in that respect.

Mr. CHENOWETH. Immediately after World War II, as I recall, there were large numbers of pilots who were released from the service, who went back home and found that their home situation was not quite as exciting as life in the Air Force, and who tried to get back into the Air Force, but found they were unable to do so. This seems to be rather an unusual situation, because you are now telling the committee that there is a shortage of that type of personnel. At least at that time these men were trying to get back into the service and the Air Force refused to take them. What is that situation now? On the one hand we have a situation where these people are anxious to serve and on the other hand we are told that we do not have enough of them, that we have to train them. There seem to be two extremes in this situation. Can we not draw some conclusions from the facts?

Mr. CARY. Again, I cannot speak for the Air Force, but I think perhaps their problem was that they were geared up immediately after the war to certain plans for a reduction in force, having had a very large military force during the war, and obviously there was no necessity of their continuing such a large operation during peace time.

Here is the difficulty that we find now. The reason we anticipate a shortage is because many of those people who were trained pilots during World War II, have not flown much since that time. Many of those who were trained mechanics have gone into other fields of work. Consequently their skills are no longer current, as aircraft have been changing. In other words, there is a lack of practice and experience you might say, so far as flying is concerned.

Many of these men have now been married and have families and are no longer interested in that type of operation, particularly during war time. So they did not maintain their proficiencies either in the Reserve or as civilians.

Mr. CHENOWETH. Are the commercial airlines today having difficulty in obtaining qualified pilots and other personnel?

Mr. CARY. I assume that they are. I think that is so because of the fact that they do have intensive training programs for their own pilots. Apparently the number of people who are interested in that type of work, who have the training and experience to qualify are not enough to meet their demands, so that they have to provide training of their own.

Mr. CHENOWETH. In other words, you would say that they are advertising for additional personnel, both pilots and ground crew?

Mr. CARY. I think you will find that that is true. In the mechanic field you have a situation where the aircraft-manufacturing industry has expanded considerably in the last few years, and that field is very attractive to the same type of individual who might perhaps have become an airline mechanic, but because of the differential in wage scale, they will go where the salary is higher and at the moment, apparently, that is in the manufacturing end of the operation.

Mr. CHENOWETH. You say that you are the Deputy Administrator of the Air Transportation Administration?

Mr. CARY. Yes, sir.

Mr. CHENOWETH. Tell me briefly something about the functions of the Air Transportation Administration.

Mr. CARY. The Defense Air Transportation Administration is a part of the Department of Commerce. It was established following the National Security Resources Board Air Transport Mobilization Survey. This was a survey which was made approximately 2 years ago. It considered the problems in the aviation field from the mobilization standpoint. It had to do with manpower, training, overhaul and maintenance, and a war air service pattern; airways, airports—all of the problems associated with civil aviation.

One of its aims was to find out how we could best utilize civil aviation facilities during mobilization and to have a plan set up and agreed to by all concerned prior to such an emergency arising, rather than to try to do everything at the last moment.

After the survey completed its work, it was obvious that there were a number of recommendations which it would require some agency to follow up and carry out.

The Defense Air Transportation Administration was established as that agency, in the Department of Commerce, first using the National Security Resources Board Survey as a guide, to develop those recommendations using them for their information and background.

This particular problem on manpower was one that was recognized at the time and we are still trying to find some solution to it.

The civil reserve air fleet was established as a result of the recommendations coming out of the survey.

The Defense Air Transportation Administration's primary responsibility is to provide plans and to have agreements on those plans, for the most effective use of our civilian aviation facilities in time of war.

Mr. CHENOWETH. Thank you; that is all.

Mr. BEAMER. Mr. Cary, the term M-day has been referred to and I think it would be well, for the benefit of those who are going to read the record, to state what is meant by M-day.

Mr. CARY. M-day, as we have used it here, would be the day upon which either the Congress declared a state of war or a national emergency as a result of an attack by an enemy country.

Mr. BEAMER. I thought it would be well to have that explanation in the record for the benefit of those who will want to read the record. May I ask one or two other questions? Have you indicated where the greatest requirement is? Is it for skilled mechanics, for people who do the ground work, or for pilots?

Mr. CARY. I think it is a combination of both types. Without the pilots we cannot operate the planes and without the mechanics, the pilots cannot fly the planes.

Mr. BEAMER. Is there a greater shortage in one of those fields than the other at the present time?

Mr. CAREY. There is a shortage in both fields, but I am not familiar with which one is the most critical at the present time. Perhaps Mr. Faught could comment upon that?

Mr. FAUGHT. I believe the shortage amongst the mechanics is greater at the present time. The type of training is so much different.

Mr. BEAMER. What is the ratio of requirements as between the two types of personnel? How many mechanics would be required for each pilot, for example?

Mr. FAUGHT. As a matter of comparison, the air transport industry on the basis of new equipment, that will be delivered within the next 3 years, estimates that they will need 10,500 mechanics by late 1953 and 1,800 pilots. That will give you an idea of the ratio of mechanics to pilots.

Mr. BEAMER. It is about 6 to 1?

Mr. FAUGHT. Yes, sir.

Mr. BEAMER. That brings up this point. During World War II, through the vocational education program, in the high schools and colleges a large number of mechanics were trained in various skills in aviation. Do you think that a portion of this program could be carried on through those institutions, by way of a similar program to that which was carried on during World War II?

Mr. FAUGHT. Yes, sir. Those programs were very helpful. At the present time, however, these institutions are not turning out very many certificated aircraft engine and aircraft mechanics.

Mr. BEAMER. We can understand why they would not be turning out pilots, but they might turn out men in the ground crews, the mechanical personnel.

Mr. FAUGHT. Such a program would be helpful; yes, sir. I am not familiar with any program that is being considered to meet M-day requirements in that field. As Mr. Cary has indicated, nobody knows when M-day will be. We have to consider the length of training that is necessary to meet certain emergency requirements. If it took 4 years to train these people, and if we were to plan on that type of program, then we would have to take a calculated risk that nothing would happen in 4 years.

Mr. BEAMER. Do you gentlemen happen to have any information concerning the probable number of men who desire to get pilot training or aircraft mechanics training? The reason I ask that question is this. I have heard a number of times that the Air Force is having difficulty in getting flying personnel, that a great many of them prefer

ground service to flight service. Have you had any experience with that so that you could comment on it?

Mr. CARY. I have found in general that the decision that an individual makes as to whether he will go into the maintenance end or the flying end of aviation depends largely upon his personal background and educational training and ability.

Until very recently, until World War II, the requirement for the military services was that he had to be a college graduate, have a college degree, or at least that it was preferable, or a degree in engineering, before he would be even eligible for flight training. Those requirements have been lessened in the period of the last 10 years.

I think you will find, however, that from the educational standpoint, the secondary school level would be average for your maintenance personnel and mechanics, whereas pilot personnel have been preferably college level. The tendency is for the qualifications for the pilots to be higher.

Mr. BEAMER. What I was trying to get at is this. Do the majority of the young men today want to get flight training or do they prefer to get training as mechanics or as engineers in that field?

Mr. CARY. I have no figures on any cross section of the population as to what the desires of the youth of the country are in that respect. From our experience and what the industry tells us, there has been a definite tapering off in the desire of younger people to become pilots. It appeared very glamorous at one time, but as the industry has become a little more mature and also as some of the hazards of flying have become more widely known, those people who were willing to take those hazards have been becoming less in number as compared with former years.

In the early days of aviation, particularly military aviation, that was true. But now I think we have the problem of how to attract sufficient people into this field, people who want to fly and who want to become pilots.

Mr. BEAMER. In view of the decline in the number of young people who want to become pilots or go into the flying end of aviation, do you think there should be some incentive to make that field more attractive?

Mr. CARY. Yes, I think that there should be.

Mr. BEAMER. I mean, in the armed services as well as in commercial flying. Perhaps some of those incentives exist now, that we do not know about.

Mr. CARY. I am somewhat at a loss to make a concrete suggestion as to how the Armed Forces can meet their recruiting program, make it more attractive, more interesting. I think they have gone a long way in doing that. They have certainly used various means of disseminating information about the service, through the schools, through the use of posters, and so forth. But I think the general interest of the public, in aviation, has dropped to some extent and, unless we develop some means of reaching the younger people and of giving them a fair appraisal of the opportunities in aviation, and making those opportunities of easy access to them, we are going to continue to have that problem.

In the early days of the aviation industry, there was a great deal of glamour to the business of being a pilot, and so forth. But now air-

line transportation has become much the same as any other transportation and its attractiveness to a great many individuals has dropped off.

Mr. BEAMER. I believe that is all.

Mr. MACK. Mr. Cary, do you feel that a program similar to the one suggested in these bills would aid in creating more interest among the younger men in the aviation field?

Mr. CARY. I think that definitely it would serve to stimulate interest. Also I think it goes to meet the problem of economics, to some extent, which problem at the present time is a deterrent. In other words, you may have people who are interested, but who cannot afford to do anything about it. I think such a program as this proposed in the bill would certainly stimulate interest and would attract people who might otherwise, because of economic reasons, feel that it was something that they could not do.

Mr. MACK. We were talking about the decline in interest in aviation since just before World War II. Another point on the disappearing supply of skilled personnel in this field is the fact that many of these boys who had been fliers are moving into a higher age bracket. Naturally they do not have as much confidence in themselves, as pilots, as they used to have. They are 10 years older than they were during World War II. Many of them have gone into other walks of life, into other professions. I believe that has had something to do with the shortage that we face today.

Mr. CHENOWETH. I wonder if I may ask another question, Mr. Chairman? I intended to inquire about the Civil Air Patrol and what its contribution was in the development of pilots and personnel. Would you comment on that?

Mr. CARY. I am sorry, I am not too familiar with the activities of the Civil Air Patrol. It now comes under the Department of the Air Force. I think perhaps if you are going to have an Air Force witness later, he can probably give you a much better answer than I on that question.

It is my understanding that they do have a training program for cadets, that they attempt to develop interest in the subject. However, I have no figures on how successful they have been.

Mr. CHENOWETH. Your Department has made no survey of that?

Mr. CARY. The people who conducted the manpower survey did consider all the various sources from which manpower could possibly be drawn and I think even including the Civil Air Patrol, they came to the conclusion that we were still going to have shortages and critical shortages in time of war.

Mr. CHENOWETH. Would it be at least a partial solution of the problem to strengthen the Civil Air Patrol, and perhaps provide some financial assistance to that agency?

Mr. CARY. I think if the Civil Air Patrol is an effective organization, that would be a desirable thing to do.

Mr. CHENOWETH. Thank you.

Mr. MACK. You have no suggestions other than the bills which are before us, to eliminate this shortage in supply of personnel, is that correct?

Mr. CARY. I am sorry, sir; I do not.

Mr. CHENOWETH. I have one other question, Mr. Chairman. I was intrigued by your statement that there is an apparent lack of

interest on the part of young men in entering commercial aviation in one capacity or another. I have always had the impression that it was the other way around, that there were more young men who wanted to get in than there were opportunities available to them.

Would you care to comment on that?

Mr. CARY. I think in the field of pilots and of maintenance personnel, that is not true. In the pilot field, unless a young man receives his training from the Government, through the military services, or in some other way, or under the GI bill, he has to pay for his own training. It is necessary for him to finance himself during that period. So that, although there may be a large number of people who would be available and who would like to be airline pilots, because of the financial problem involved, they are not in the position where they can get sufficient training to qualify so that they can apply for such a job.

Mr. CHENOWETH. What are the opportunities for training now? Suppose I were a young men interested in becoming a pilot. What can I do to get training?

Mr. CARY. If you had had no previous training, I think what you would have to do would be to go out—leaving out the military services in this instance—would be to go to a fixed-base operator, a flying school in your locality and arrange to take flying lessons. You would probably start out in a Piper Cub, or some other small light plane. You would have to pay your own expenses. I do not know how much that runs per hour now, but over a period of time, before you could receive your commercial license, it would be necessary for you to spend several hundred dollars, which would make it impossible for a great many of the younger men.

Mr. CHENOWETH. What results did we achieve under the GI training program? Many young men went into that program. I think there was considerable criticism over some of the programs that were adopted. But did not that program provide a large number of competent pilots and other aviation personnel, or was it just a complete failure?

Mr. CARY. I would not say that it was a complete failure. I think you obtained a number of pilots who were qualified up to a point. They required additional training before they could become professional airline pilots. However, I think one of the problems that you have to face in regard to that is that those people who were eligible for GI training had been in World War II. They took their training following the war. By that time they had gotten to an age where it was difficult to start in at the bottom of the ladder as a copilot for an airline, with the expectation of serving a number of years as a copilot, before being promoted to a captain's pay.

If the man had married and had a family, he probably would have decided that he would go into something that was more remunerative immediately. Consequently those people we had to write off, as they were not available for airline pilots.

Mr. CHENOWETH. Is there any age limit on airline pilots?

Mr. CARY. There is no actual age limit. A man can fly as long as he is physically fit. But he has to be 16 to get his private license and 18, I believe, for his commercial license.

Mr. Wright has just shown me an ad of one of the airlines for pilots. It is required that he shall be a high-school graduate, college preferred. The age group is 23 through 35.

My comment on that is that I think you will find most people in the upper age brackets, 30 or over, are doing something that is more remunerative so that unless they had an intense desire to be an airline pilot, the airlines would not get too many of them.

Perhaps the airlines have some figures on how many they do get.

Mr. CHENOWETH. Do they pay the young man while they are training him?

Mr. CARY. Yes. They do. In the airlines school, the pilot must have a commercial license and an instrument rating with 800 flight hours. He then receives 6 weeks of intensive ground and flight training and a salary of $290 per month. Upon assignment as a first officer he receives $290 a month with an increase every 6 months thereafter up to $550.

Mr. CHENOWETH. Then he must have his basic training before he is eligible for this?

Mr. CARY. Yes, sir. He must have a commercial license before he can apply for this job.

Mr. CHENOWETH. Our main problem is to give these young men the opportunity to obtain this basic training, is that right?

Mr. CARY. That is right.

Mr. CHENOWETH. And none of the airlines subsidize that type of training program, is that right or not?

Mr. CARY. That is correct. He must have obtained his commercial license through his own efforts or in the military services or in some other way.

Mr. CHENOWETH. How much would it cost a young man, roughly, to get that training?

Mr. CARY. $2,500.

Mr. CHENOWETH. Over what period of time?

Mr. CARY. About a year.

Mr. CHENOWETH. He would have to put up $2,500——

Mr. CARY. In order to get his flight time.

Mr. CHENOWETH. That would be a rather undue burden on the average young man.

Mr. CARY. I think it automatically cuts out a lot of people who might otherwise become pilots. They are financially unable to bear that burden.

Mr. CHENOWETH. Thank you.

Mr. FAUGHT. May I make one comment on the Civil Air Patrol?

Mr. CHENOWETH. Yes.

Mr. FAUGHT. CAP [Civil Air Patrol] is an auxiliary air force. It makes a valuable contribution to aviation. They are not, however, allowed to give any flight training. They have a senior program for qualified pilots who are members of the senior Civil Air Patrol organization. They have a cadet program for the younger people, 16 and 17 years of age, which does create some interest in aviation.

Mr. CHENOWETH. Do they give them training in this cadet program?

Mr. FAUGHT. Yes, sir. They give them ground school training. It is an aviation education program. It is valuable, but they do not give flight training.

Mr. CHENOWETH. They bring the cadet up to the point where he is ready for flight training, and then they drop him?

Mr. FAUGHT. It creates interest in aviation education. It is a worth-while program. The Civil Air Patrol senior program makes

a great contribution in air search and air rescue and emergency activities. They generally own their own airplane.

Mr. CHENOWETH. Those would be qualified pilots. I was thinking of the young man who is anxious to get his commercial license. What do they do for him?

Mr. FAUGHT. This organization meets once a week or once every 2 weeks. They have courses in aviation education; meteorology, and so forth. It is valuable training, but it is not intensive enough.

Mr. CHENOWETH. They have no schools for flight training?

Mr. FAUGHT. No, sir. They give indoctrination flights; that is, they take them up and let them see what it is like to fly. But there is no flight training. They do not give them enough ground-school training to qualify them to take the commercial license examination.

Mr. CHENOWETH. As I understand it, then, a young man may obtain necessary training in a year's time and it would cost him about $2,500 to do that?

Mr. CARY. Yes, sir.

Mr. CHENOWETH. Thank you.

Mr. MACK. If there are no further questions, thank you, Mr. Cary.

Mr. CARY. Thank you, sir. I appreciate the opportunity of appearing before you gentlemen.

Mr. MACK. The committee will stand adjourned until 2 o'clock.

(Whereupon the committee adjourned until 2 p. m.)

AFTERNOON SESSION

Mr. MACK. The committee will come to order.

The first witness this afternoon will be Mr. Charles Horne, Administrator, Civil Aeronautics Administration.

STATEMENT OF CHARLES HORNE, ADMINISTRATOR, CIVIL AERONAUTICS ADMINISTRATION

Mr. HORNE. I am Charles Horne, the Administrator of Civil Aeronautics Administration.

Gentlemen, I am very glad to have the chance to appear before you and tell you why I believe that H. R. 7073 and H. R. 7074 offer the most practical solution yet suggested to the problem of skilled manpower shortages in the aviation industry.

These industries have had to expand to meet increased demands for air transportation in the present crisis. At the same time a large number of skilled workers have been called into the Armed Forces. Normal labor sources have not been able to supply the additional skilled workers required for industry expansion, nor to replace those who have gone into the Armed Forces.

These shortages are most acute in the ground mechanic and ground technician occupations.

At the present time there are enough schools to train these people. The difficulty has been that these schools have been unable to attract a sufficient number of serious, qualified students. The primary reason for this, in my opinion, is the relatively high cost of aviation training in both time and money. For example, an aircraft and engine mechanic training course takes about 18 months and costs about $1,000 in tuition alone. Apparently, most young people with

that much time and money to train for a profession or career would rather choose some other occupation, possible one that wouldn't get their hands dirty. Since the high cost of this training is the primary obstacle, at least so it seems to me, and since the bills you are considering today deal directly with that problem, I think they are realistic and workable.

By providing for Government contribution of up to 75 percent of the cost of training, this legislation would bring the trainee's cost of preparation for an aviation career down to the level of expense for other comparable vocational training; by requiring him to foot the balance of the bill, we are assured that those who take the training are seriously interested in aviation as a career.

In reading through these bills, I find several other very desirable provisions. I think the purpose is well stated; the program is very properly limited to the defense mobilization needs of the Nation, to be expertely determined by consultation among all the interested Government agencies. The provision authorizing the Government to negotiate contracts with training schools is appropriate; it would be impossible to assure either the best quality of instruction or proper geographic distribution of program activities, if it were necessary to award these contracts on strict competitive bids. The standards set forth in section 6 for the regulations under which the program would be conducted are all reasonable: others besides high school and college students are properly assured the opportunity to participate in this program; the requirement that the prospective trainee give assurance that he will remain in aviation is a further safeguard against wasting the training on distinterested persons; the authority to prescribe rigid standards for the training schools to be used in the program will make it possible to use the best facilities available for carrying out the program. I believe the severe criminal and contract termination penalties provided under section 7 for frauds in connection with the program should discourage any questionable practices by those who conduct the training.

The amount of appropriation authorization has been left blank for the purpose, I assume, of giving this committee an opportunity to determine the extent of the program that should be authorized if the legislation is approved. The Civil Aeronautics Administration is conducting a survey of the aviation manpower needs of the Nation to determine current needs and ascertainable M-day requirements. Unfortunately, that survey has not yet been completed. Preliminary tabulations of the few reports received show substantial present shortages of trained manpower and much greater labor deficits in terms of industry M-day assignments. I hope to have the actual figures for you shortly, in time to be used in your report. I believe the legislation should authorize sufficient appropriations to train all those currently required and, in addition, as many of those that will be needed in the event of full civil mobilization, as Congress may believe appropriate to train annually. Until our up-to-date figures on M-day needs are available, you may wish to consider certain pertinent figures in the report of NSRB Task Group A–4 which is classified but could be made available to you in closed session if you so request.

Since civil aviation would play a vital role in any major national defense effort, national interest demands that we keep the air-trans-

portation industries strong. These industries are now threatened by serious skilled manpower shortages, shortages which will become critical in the event of a national defense crisis. I believe that H. R. 7073 and 7074 are well designed to deal with these shortages effectively, realistically, and efficiently. I wish to go on record as supporting these bills.

I have been advised by the Bureau of the Budget that it has no objection to my making this statement, but that enactment of H. R. 7073 or 7074 would not be in accordance with the program of the President at this time.

Mr. DOLLIVER. Your first paragraph of the statement, Mr. Horne, prompts this inquiry: You say that these bills offer the most practical solution yet suggested. What other solutions have been offered, if any, that you know of?

Mr. HORNE. As far as legislation is concerned in this Congress, S. 434, S. 507, S. 2803, S. 2892, and H. R. 1521 have been introduced. However, at various times in the past there have been other methods suggested. Of course, other recommended solutions would be for industry to pay for a certain amount of training or for the trainees themselves to pay for all the training.

Mr. DOLLIVER. Do you know if there has been any exploratory conversation between the Civil Aeronautics Administration or the Civil Aeronautics Board and the industry to arrive at a solution outside of any legislative enactment?

Mr. HORNE. I have personally discussed with various members of industry what could possibly be done, and to what degree industry could do training for themselves. They are doing now, I think, about the maximum that they can afford to do under the present situation. Various airlines and various private companies are attempting to do as much training as they can. But this, of course, would only be the training that they could afford to do for the immediate hiring and filling of vacancies which they have. Obviously, again only the very large industries, that is, the very large airlines or very large construction industries, could afford to do any training. A great bulk of our general aviation industry is made up of small fixed-base operators, corporationally owned aircraft and things of that type.

Mr. DOLLIVER. What type?

Mr. HORNE. Corporation owned, privately owned, business owned; agricultural aircraft, for example. Such small companies obviously cannot do training which is a very expensive proposition and training cannot be begun by a small company on the basis of training one man. It is essential that you have a certain kind of equipment in your school, and an organized school with trained instructors. The most practical means of training is to have a relatively large type of school, with equipment and instructors and a sufficient number of students to make it a practical thing.

Mr. DOLLIVER. Have you had any exploratory talks with the people in the Apprentice Bureau of the Labor Department with respect to developing an apprentice training program? We heard from the Labor Department yesterday, as you may recall.

Mr. HORNE. Yes, sir. The CAA as such has not had any exploratory talks with respect to that apprentice training program. We have not had direct exploratory talks on an apprentice training program with the Department of Labor, to my knowledge.

Mr. DOLLIVER. You are familiar, of course, with the apprentice training program of the Department of Labor, are you not?

Mr. HORNE. In a general way, sir.

Mr. DOLLIVER. Do you think it would be worth while to have such a discussion with them?

Mr. HORNE. We would be glad to have such a discussion, sir, but I don't think the two things are compatible. Because this apprentice training program, as I understand it, and I am only generally familiar with it, did not seem to me to be quite applicable to this particular kind of problem because of the large amount of special training required for these special skills in organized schools, and the fact that a definite amount of money is required to train him, unless the trainee is willing to pay the cost himself.

Mr. DOLLIVER. What is the fact as to the stability of employment in this line of work? Suppose a young man does secure adequate training, either at his own expense or some other way, to be an A. and E. operator, a skilled mechanic in the aviation and engine field. What are his prospects of obtaining and continuing to have remunerative employment?

Mr. HORNE. In my opinion, sir, his prospects today are excellent, to get employment immediately after he has completed his training, and his prospects of having continued employment are also excellent. However, I would like to add to that an explanation, in my opinion, of one of the reasons that we find ourselves in the difficulty that we are in today.

During the war as we all know a great many pilots and mechanics were trained by the Armed Forces. Right after the war in 1946, as we will recollect, there was a tremendous thought that many aspects of civil aviation would grow tremendously and we would be able to use a great many of those young men. However, in the years 1946, 1947, and 1948 we did not experience the expected growth in civil aviation that many people had optimistically foretold. What we did experience was a reduction in some aspects and particularly a reduction in the military aspects. Consequently, we had a period there in 1946, 1947, or 1948, in which a large number of qualified and trained men who perhaps would have liked to have had employment in aviation were not able to get this employment. However, starting in 1948, when most of those young men coming out of the services had been discouraged from being able to find a place in aviation, then the great expansion did start and now we are in a position where both our military forces, since 1948, 1949, and through 1950 and our civil aviation is expanding, even more rapidly than some thought it would. But that initial hiatus caused a loss of a large number of men who were trained and who otherwise would have been available but are no longer available.

That also gave rise to a feeling, perhaps, throughout some of our young people that aviation did not offer the immediate opportunities that they heard it would. But now it does, and in my opinion it will continue to do so over the years if we can ever get the young men back and get them trained.

Mr. DOLLIVER. Is it not true that there is a very close relationship between training for an automobile mechanic and an airplane mechanic, in some respects at least?

Mr. HORNE. Very minor respects, sir, and only in the basic fact that they are internal combustion engines. Really, the training for an A. and E. mechanic, specifically in aircraft, air frames or engines, a very higher type of training, much more complicated engines and mechanisms of all kinds. The training required to be a very skillful automobile mechanic is only a small fraction of that required to be an A. and E. mechanic, even an adequately skillful aircraft mechanic.

I think there is an added point, if I may say something on that. During these same relatively static years in aircraft expansion that I mentioned, a number of young men found that they could obtain almost as much remuneration for working in the garage as they could working in the airport or working with some aviation organization. Whether they all have the word that that is not as it was, and that there are better opportunities, is something that I don't know. We have tried to spread the word, and I know that the commercial airlines and general aviation have done the same. But still in all there are so many opportunities for highly remunerative employment today for a man who has any sort of training, that the incentive to go out and get skilled training has been reduced, I fear.

Mr. DOLLIVER. There must be some of those men who deserted the aircraft industry in the years that you mentioned who are still qualified to take some of these jobs, if you could just find them, are there not?

Mr. HORNE. I rather think not, sir. The airlines and general aviation have made some very strong and sincere efforts to find these people and sort of bring them back into the fold. They have been able, so far, to keep their heads above water by finding a few and bringing them back, but now they have come to the point where they are scraping the bottom of the barrel of those who are trained or even partially trained or can be encouraged to come back. We have gotten back quite a few. We have increased the level of employment. A great many men have been gotten back and hired from a great number of civilian walks. But now that we have done that, we have arrived at the point where there does not seem to be any more of them who want to come back because they have already become established in other businesses equally remunerative and perhaps not so demanding.

Mr. BEAMER. Mr. Chairman, if you please.

Mr. Horne, I was interested not only in your statement but to some other statements in regard to the shortage of workers. On the floor at the present time there is a debate on the agricultural appropriation bill, and it has been emphasized very strongly and strenuously there that the farmers are experiencing a very severe shortage of workers. I believe you will find it is true in almost every endeavor, that there is a shortage of workers. The reason I am bringing up this point is that if there is some kind of an incentive given to attract people, for instance to your particular interest, to the aviation field, it is going to be in competition with the other endeavors, for instance the farmers or whatever other business it might be. Do you really think it can get enough to satisfy the needs, or if you do, will it be at the expense of some other industry that also needs help very badly?

Mr. HORNE. I don't think, sir, that the number of people that we require would really have any impact at all upon the over-all labor market that you mentioned, for two reasons:

First, because the skills required are so high and the level of training required is so high, that the ordinary labor market is either not susceptible or does not desire that type of training. So this thing we are talking about here is a very highly skilled, well-trained man for an A. and E. mechanic and an even more highly skilled and greater trained man for pilot. Consequently, I think that in every case that I am aware of in industry the shortage has been largely in unskilled workers until such time as the industry got to the point where it had a real need for skilled workers, at which time the question of remuneration rather solves the problem in that if there is a sufficient need for the skilled workers, then the question becomes that of training them, after which the number of skilled workers is relatively small compared to the number of the over-all labor market.

Mr. BEAMER. The reason I mentioned this is because I am more familiar with agricultural workers.

Contrary to the opinion held by many people, farming today is a very skilled process. First of all, it is mechanized and the successful farmer is one who is a graduate of an agricultural college of some type. They just do not pick up a farmer and make him a farmer in a matter of months. It is a matter of years of training, working with it and living with it. I was wondering if perhaps we might not think about these other industries, for example, not only farming and not only aviation. We are living, aren't we, in a more skilled and technical age as you have mentioned?

Now, you said that you were going to have some studies available later on that would give us probably the number that you would require. Can you give any estimate that you think you might have, not for the military but I am thinking of civil and commercial aviation at the time.

Mr. HORNE. Yes, sir. I believe the scheduled airlines have already testified, have they not, in regard to their losses and their lacks and their requirements? I could add to that, then, a very small piece of information at this time, but nevertheless significant in my opinion.

We have a total of only 698 reports so far out of what we expect of 5,000 reports. So you see, we only have a small sample yet of the total that we expect to get. These reports were from the small operators, little business, the fellows who employ one to five men in their operation; the backbone, as I call them, of general aviation, the grass-roots people and the small airports, and fixed base operators throughout the country. They cannot train for themselves. They have to have a market of trained people. These reports have indicated that out of that very small number of 698, there is an immediate need for 164 pilots and 675 mechanics.

Mr. BEAMER. We need more farmers than that right now in our county. I am not trying to discourage your argument. There are acres and acres of land that are going to lie idle this year, and the Defense is asking, the Department of Agriculture is asking, for an increase in production. That brings up another point.

Are you having reasonable success with the Selective Service for deferment of men who are required or desired for the aviation endeavors? Has that been explored?

Mr. HORNE. It has been explored, sir, and is still in the process of being explored. But as I think we all understand, the Department

of Defense has not been willing to make or has not made any blanket deferments of any type of worker, so far as I am aware. We have definite requirements and have made definite arrangements, for example, with the Department of Defense in regard to the recall for military duty of people working for the Civil Aeronautics Administration, and other elements of aviation have made similar direct approaches. But that is with regard to a few people. As far as any blanket or over-all question is concerned, the Department of Defense does not, and I do not think will, have any deferment of one industry.

Mr. BEAMER. Of course I am not holding a brief for agricultural industry or the food industry, but is it not true that all principal industries or producing industries, perhaps, are finding the same situation with which your industry finds itself today?

Mr. HORNE. I don't believe so, sir, not to the degree. Of course, as you say, and you are 100 percent right, we are in a more mechanized age. As you say, our farmers are far more skilled and mechanized today than they were yesterday. And similarly with other industries.

However, I would point out that while all industry has become more mechanized and requires more semiskilled workers, the degree and number of skilled workers required in the aviation industry is high relative to other industries, and the number of shortages in the aviation industry is high on a percentage basis relative to the percentage of other industries.

Mr. BEAMER. I think that we will find that this shortage exists in industry. Suppose this legislation is approved by both Houses of Congress and aid is given, isn't it possible that other industries likewise would come and say, "We need trainees. We have to have assistance, we have a severe shortage"?

Mr. HORNE. I should certainly think it was possible, sir, but I would say if they had as many facts and figures to prove the need to the country of what they recommended, then very likely they would get the same sort of treatment we were going to get.

Mr. BEAMER. Then you might have a large number of them. One last question: I am wondering if these trainees who are given this particular assistance, do you feel that they should be obligated to continue the work for a reasonable length of time to justify the assistance they have been given?

Mr. HORNE. That is our aim, sir. If we have anything to do with it, we certainly would do all we could to do that. As I mentioned in my statement, the fact that he has to pay for it, part of it, himself, insures that he is going to be serious about continuing with it.

Mr. BEAMER. Of course, it is a smaller amount under this arrangement.

Mr. HORNE. Yes, sir; it is. But nevertheless probably a very significant amount to a young man these days. Also, I think that the opportunity will keep them with us. I think that the method of screening out here will do a lot toward insuring that nobody would go on and get through with the thing and continue with it who is not serious about it. Whether it would be possible to get any mandatory provision that he would have to sign up or not, I don't know.

Mr. BEAMER. It might be a little difficult to secure that; might it not?

Mr. HORNE. I think so, unless it was on a military basis. I know of nothing except on a military basis that somebody signed up and guarantees to serve a certain amount of time.

Mr. BEAMER. Where is the greatest need in your opinion, in the civil aviation or military?

Mr. HORNE. Right now I think it is in civil aviation.

Mr. BEAMER. That is all, Mr. Chairman.

Mr. HINSHAW. I am very much interested in the remarks of my colleague from Indiana, pertaining to farmers. Farmers likewise use aviation today. As the gentleman no doubt knows, as reported yesterday by a witness from North Dakota, there are 178 airplanes used for crop dusting in North Dakota alone, and a great many thousands of them over the United States in that function. Crop dusting is considered one of the best means of saving crops and increasing production of farms, that has yet been discovered.

Incidentally, as my friend from Maine points out, crop dusting is one of the most difficult and hazardous forms of aviation.

Mr. BEAMER. We have many fine farmers in our section and we would like to encourage them, too.

Mr. HINSHAW. Quite so. So that aviation is not unknown to farming. I might point out that the authors of this bill thought a good deal, very seriously, concerning any method which might be provided for assuring those who achieve this training where and how to remain in the industry. It will be remembered that under the civil pilots training program of 1939 there was no obligation whatsoever and no participation as to cost. It was provided altogether free, as I remember it. And yet, of the 100,000 who received primary flight training under that program, I believe all those who were qualified, physically and otherwise, became members of the Armed Forces, generally in the flight capacity. So that the actual huge reserve of trainees at that time was of very great value to the Armed Forces, regardless of what the Armed Forces may say today.

As a matter of interest to the committee, there isn't anybody left around here in the Armed Forces who remembers anything about it, all those who were in it, up to some time ago when the old guard was replaced by the new guard, remembered very well indeed.

Mr. Horne, do you have in your department statistics to show how many A. and E. mechanics are presently employed throughout the industry? Or do you show simply the number of licenses that are still qualified?

Mr. HORNE. The number of valid licenses, sir, is about 70,000.

Mr. HINSHAW. About 70,000.

Mr. HORNE. Yes, sir.

Mr. HINSHAW. You do not know how many of them are actually employed in the industry nor how many have become a part of the Armed Forces? There is no way of dividing that?

Mr. HORNE. No, sir; I am afraid we don't know that, and we have no way of finding out without circularizing those people, as to just how they are now employed.

Mr. HINSHAW. You have, I suppose, the totals in the other categories of licenses, such as pilots?

Mr. HORNE. Yes, sir.

Mr. HINSHAW. And other personnel?

Mr. HORNE. But there again, sir, we have a number of valid licenses. The degree to which the individuals are using those licenses to actually fly is a statistical matter which we don't have the force to keep track of.

Mr. HINSHAW. How long are these licenses continued in existence without some requalification or notice of qualification by employment?

Mr. HORNE. The A. and E. mechanic certificate continues in force indefinitely but the holder thereof must serve in the capacity of a mechanic for a 6-month period within any 24-month period in order to be able to continue to exercise the privileges permitted under such certificate.

Mr. HINSHAW. Therefore, these people have been rechecked, this 70,000, within 2 years?

Mr. HORNE. Yes, sir. That is as of June 30, 1951, the date of the 70,000.

Mr. HINSHAW. And the figures have not been brought up to date?

What about pilot personnel in the various categories of flying qualifications—transport, commercial, private?

Mr. HORNE. I don't have those figures with me, sir, but we would be glad to make them available for the record.

(The information referred to is as follows:)

Our records indicate that approximately 10,000 air-transport ratings have been issued. Of these, about 7,841 are employed by the air-transport industry as indicated by the air-transport facts and figures as of September 30, 1951, CAB Form 41. Our records indicate that approximately 200,000 commercial-pilot certificates have been issued. From the records of current physical examinations, we are of the opinion that many commercial pilots are inactive. We do not know the accurate number as many commercial pilots are Reserve officers who take their physical examinations from military flight surgeons who may not forward copies of these examinations to the CAA. There have been approximately 350,000 private-pilot certificates issued. We do not have information as to how many of these are now active. The holders of this type of certificate are only required to take a medical every 2 years.

Presently the Airman Records Branch is making a check on the student-pilot certificates that have been issued. This check indicates that thousands of these certificates have been dormant and the holders of those certificates have apparently made no progress or have lost interest in continuing the aviation activities. I am advised that a large number of these certificates will be removed from the active files.

In answer to the qualifications, the following is submitted:

PRIVATE PILOT

1. Aeronautical experience:
(*a*) Must have 25 hours of solo time and 15 hours of dual time.
(*b*) Ten hours of solo time must be cross country.
(*c*) One flight and landing at a point more than 100 miles from point of departure.
(*d*) Each flight logged as cross country shall be to a point more than 25 miles from point of departure.
(*e*) Included must be 5 hours of dual instruction in cross-country flying.
2. Written examination is given in—
(*a*) Meteorology.
(*b*) Navigation.
(*c*) Air-traffic rules and regulations.
(*d*) General operation of aircraft.
3. Flight test is required to indicate proficiency and may be given either by CAA-designated examiner or CAA agent.
4. Private pilot is required to have a physical examination every 2 years, the examination to be made by either private physician or CAA-designated examiner.

COMMERCIAL PILOT

1. Aeronautical experience:
(*a*) Shall have had 200 hours of flight time and shall include 100 hours as pilot in command of airplane.
(*b*) Shall have had 20 hours in cross-country flying as pilot in command.
(*c*) Shall have had one flight of at least 350 miles in length to a point not less than 150 miles from point of departure, which will include three full-stop landings en route.
(*d*) Shall have had 5 hours of night flying time, including 10 take-offs and 10 landings.
(*e*) Shall have had 10 hours of instrument-flight experience, with not less than 5 hours of instrument-flight instruction.
2. Written examination is given in—
(*a*) Civil air regulations.
(*b*) Airplanes.
(*c*) Engines.
(*d*) Meteorology.
(*e*) Navigation.
3. A practical flight test is required, which may be given by a CAA-designated examiner or CAA agent.
4. A medical examination is required every 12 months by a CAA-designated medical examiner.

AIR-TRANSPORT RATING—HOLDER OF COMMERCIAL CERTIFICATE

1. Aeronautical experience:
(*a*) Shall have had at least 1,200 hours' flight time as pilot within the last 8 years of which 5 hours shall have been had within 60 days immediately preceding the date of application.
(*b*) Five hundred hours shall have been cross-country flight time.
(*c*) One hundred hours shall have been night-flight time.
(*d*) Seventy-five hours shall have been instrument time under actual or simulated instrument conditions of which not less than 50 hours shall have been in actual flight.
(*e*) Two hundred and fifty hours of the preceding requirements shall have been as pilot in command, of which 100 hours shall have been cross-country flight time and at least 25 hours shall have been night flight time.
2. Written test is given in—
(*a*) Civil air regulations in fundamentals of air navigation and the use of navigational aids in the aircraft and on the ground.
(*b*) General system of weather collection and dissemination, weather maps, weather forecast, and weather sequence symbols, elementary meteorology, including modern knowledge of cyclones as associated with fronts.
(*c*) Navigation, including facilities in use on civil airways, radio ranges, radio-marker beacons.
(*d*) Radio-communications procedures as applied to aircraft operation.
(*e*) The basic principles of loading and weight distribution.
(*f*) Instrument flight.
3. Flight test may be given by an examiner designated for this type of examination or by CAA agent.
4. In addition to his techniques and flying of aircraft, must demonstrate ability to fly by instruments, including let-down procedures, holding procedures, etc.
5. A holder of an ATR rating must have a physical examination every 6 months, one of which, each year, must be given by a designated CAA medical examiner.

Mr. HINSHAW. Will you also make available at the same time the recheck as may be required or may not be required of these personnel?

Mr. HORNE. Yes, sir.

(The information to be furnished follows:)

The regulations prescribe that the holder of an ATR rating shall be checked once each 6 months by company personnel and further that a certain percentage of these rechecks be made by CAA agents. In addition to the above, the CAA agent periodically makes an inspection check on a regular scheduled flight to ascertain the competency and compliance with company-operation manuals as approved by the CAA. On commercial and private pilot certificate holders, no

regular recheck by CAA personnel is given; however, authority is contained in the Civil Aeronautics Act of 1938, as amended, under section 609, title of which is "Amendment, Suspension and Revocation of Certificates." Authority is quoted:

"The Authority may, from time to time, reinspect any aircraft, aircraft engine, propeller, appliance, air navigation facility, or air agency, may reexamine any airman, and, after investigation, and upon notice and hearing, may alter, amend, modify, or suspend, in whole or in part, any type certificate, production certificate, airworthiness certificate, airman certificate, air carrier operating certificate, air navigation facility certificate, or air agency certificate if the interest of the public so requires, or may revoke, in whole or in part, any such certificate for any cause which, at the time of revocation, would justify the Authority in refusing to issue to the holder of such certificate a like certificate."

Mr. HINSHAW. You have the statistics, I believe, concerning the number of aircraft that are utilized by corporation owners and those that are privately owned; do you not?

Mr. HORNE. Yes, sir.

Mr. HINSHAW. Do you carry those statistics by actual make and type of aircraft, or do you keep them by gross weight, or what standard is used?

Mr. HORNE. We don't have a breakdown that way, sir, but of course each certificated airplane which has been inspected by one of our men and given a certificate that it is flyable, airworthy, shows on the certificate what kind of airplane it is, what weight it is, and so forth.

Mr. HINSHAW. Do you have them classified as corporate owners or simply airplanes?

Mr. HORNE. Simply aircraft. The certificates that we have there shows the certifications and airworthy aircraft. It does not show its use to which it is being put by its present owner. However, we do have statistics from Corporation Aircraft Owners Association as to the total number of single and multi-engine aircraft now employed in the executive or business type of flying. I didn't bring those with me but I would be glad to furnish those for the record.

(The information is as follows:)

Noncarrier civil aircraft:	*Number of aircraft*
(*a*) Agricultural:	
1. By farmers, ranchers, etc., in connection with operation of farm, ranch, etc	7,481
2. By commercial operators in seeding, dusting, spraying, fertilizing, etc	4,234
(*b*) Industrial:	
1. Aerial photography or surveying, power or pipeline patrol, medical or ambulance service, prospecting for oil, minerals, etc	1,101
2. Advertising, including banner and sign towing	486
(*c*) Instructional	11,919
(*d*) Transportation for hire: Passenger or cargo, including charter, contract, irregular, jitney, etc	3,376
(*e*) Business: In connection with a business or profession	18,244
(*f*) Federal, State, and local governments	1,066
(*g*) Pleasure and sport	10,801
(*h*) United States aircraft out of United States	836
Total noncarrier aircraft, active	59,544

Since the above table was prepared, our records indicate that there has been an increase in the number of aircraft used for agricultural aviation, such as dusting, spraying, seeding, etc. The number presently used is approximately 6,000.

Of the group shown above, there are about 2,000 multi-engine aircraft which are certificated. These are in addition to those used by certificated air carriers and large irregular air carriers and include those that are owned and operated by

members of the Corporation Aircraft Owners Association. There are many corporations and companies who operate aircraft in their business but are not members of the CAOA.

Mr. HINSHAW. I know there is an association which I suppose embraces in its membership most of the corporate owners of aircraft.

Mr. HORNE. There is the Corporation Aircraft Owners Association, sir, which embraces a large number, but still there are many who do not belong to that. Nevertheless, we have taken an effort to get an over-all figure in the number of aircraft employed in business activities. We have a breakdown of that for industry which we would be glad to furnish for the record if you would desire.

Mr. HINSHAW. I think it would be very interesting for the committee for statistical purposes. Then there are in addition to that a number of aircraft owned and operated by fixed-base operators. Are there any statistics on that, the number owned and operated by fixed-base operators?

Mr. HORNE. I cannot give you an up-to-the-minute figure as to the number of aircraft in this category. However, in the above table of active aircraft there is indicated that there are 21,116 aircraft at fixed-base operations. This is gotten from 1,101 and 486 in industrial operations, 11,919 in instructional category, 3,376 in transportation for hire, 4,234 used by commercial operators in agricultural processes. Two years ago we made a survey which indicated that there were at fixed-base operations 18,962 single engine 1- to 3-place; 4,233 single-engine 4-place and over; 878 multiengine 5-place; and 318 multiengine over 5-place—which total to 24,391. This indicates that in a 2-year period 3,275 aircraft at fixed-base operations have become inactive. We are presently making a survey of general aviation, which survey should bring the information up to date. It will be furnished to you as quickly as it is compiled.

Mr. MACK. Mr. Horne, we have another witness to testify here today who has to leave very soon. I wonder if you would mind suspending for the purpose of hearing the other witness?

Mr. HORNE. Not at all, sir.

STATEMENT OF DELOS W. RENTZEL, VICE PRESIDENT, W. R. GRACE & CO., NEW YORK CITY, N. Y.

Mr. MACK. We have Delos W. Rentzel here this afternoon, who has been associated with the Civil Aeronautics Board and Civil Aeronautics Administration, and the Department of Commerce. We would like to hear from him at this time.

Mr. RENTZEL. Thank you very much.

Mr. HINSHAW. I would like to say in advance of his speaking that he has appeared before this committee on many occasions heretofore in the three different Government employments which he has had, principally in the Department of Commerce, Civil Aeronautics Administration, and so forth, and we are highly honored that, since he left the Government some time ago, he is willing to come back and testify before the committee concerning this very important subject;

Mr. RENTZEL. Thank you, Mr. Hinshaw. I am honored to be able to come back. This is a subject about which I had both a great deal of interest while I was in the Civil Aeronautics Administration and in the Department of Commerce. It is one that I think is extremely

important to another matter which I had something to do with, the Civil Air Reserve Fleet plan which has now been adopted by the Department of Commerce and the Department of Defense. I think it is a very essential part of that program.

If I may, Mr. Chairman, I have a very short statement I would like to present, if I may, and proceed as you wish, then.

Mr. MACK. You may.

Mr. RENTZEL. Mr. Chairman and members of the committee, during my term as Civil Aeronautics Administrator, and prior to the Korean trouble, we in CAA were at that time disturbed at the then-apparent shortage of skilled personnel in civilian aviation industry. In June of 1950 I initiated a staff study on training of civilian personnel. We were then thinking of training similar to the CPT-WTS training, as was conducted during World War II, and which training fed to the military 435,165 airmen. As the committee well knows, this training program at first was not well thought of by the military. However, they later realized its value and gave it their unqualified support, which is vouched for by letters received from high-ranking officers of both the Army Air Corps and the United States Navy. Photostatic copies of letters of this nature are available. The services contributed in the neighborhood of $97 million toward this training program during World War II.

The staff study referred to above was presented to the military for their consideration during the summer of 1950. We in CAA felt that we could be of benefit in helping to improve our air power both civil and military, and could assist materially in the screening process of potential pilots, mechanics, and other airmen, and perhaps at lower cost.

In August of 1950, the Aviation Development Advisory Committee, a committee established to advise the Administrator on civil aviation matters, was in one of its regular sessions. During the course of the meeting several of its members expressed concern as to the role civil aviation would play should the Nation become involves in an all-out war. It was felt that the various facets of civil aviation could be of tremendous assistance to the military, as well as to the economy of our Nation. I requested a 12-man committee to make a study of the results of civil aviation and the role it could play. The committee members were outstanding civil aviation advisers and came from all parts of the Nation, so I knew that the report, when completed, would be broad and Nation-wide.

To aid the committee in its assigned obligation, an analytical survey of the available aircraft, airmen, and airports of general aviation—that is, the nonairline phase—was conducted and the material compiled furnished to the committee for its use.

The report of the committee was completed on August 28, 1950, and presented to me at that time. The title of the report was "America's Civil Air Power" and developed a plan to obtain maximum national benefit from resources of nonairline civil aviation.

This report created so much interest in aviation circles and in Government that it was deemed advisable to make more comprehensive study of the whole field of civil aviation, and resulted in the National Security Resources Reserve Board establishing a program for such study. As you know, this was the air transportation mobili-

zation survey of the National Security Resources Board, of which I acted as general chairman.

All the reports and studies primarily indicate an existing shortage in trained personnel in the various facets of aviation which would be a deterrent in any rapid expansion that might be required in civil aviation as an adjunct to military air power. This assistance must include for the civil air reserve fleet, the training of mechanics, technicians, pilots, and airmen for civil as well as military use, should it be necessary to utilize civilian facilities in augmenting and aiding in any training program that the military might desire to expand.

One of the most immediate results of the NSRB studies was the adoption by the Departments of Defense and Commerce of the Civil Air Reserve Fleet plan, under which a total of 331 four-engine civil airline aircraft would be made available to the military services with-personnel upon 48-hour notice. The entire nonairline fleet, organized by States, will be made available to Federal Civil Defense Administration for other essential evacuation and transportation purposes. The first steps to implement this plan are now underway. Naturally, the placing of this reserve fleet at the disposal of the military services presumes that the necessary additional pilots, mechanics, and technicians will be available when required. That manpower is not available today and will not be available when needed unless we initiate a program designed to train the required numbers of persons of essential skills.

We need no proof other than the history of World War II to convince anyone that such a training program is necessary in connection with the plan to provide for mobilization requirements. It does not make sense to adopt a comprehensive plan for civil assistance to the military air services in time of emergency without supplementing that plan with a program to provide the manpower to make it work.

The legislation before this committee was drawn for the purpose of placing that manpower plan in operation. I sincerely urge its immediate adoption.

That is all I have as a prepared statement, Mr. Chairman. If there are any questions, I should be happy to answer them, if I can.

Mr. HINSHAW. One of the thoughts presented to the committee in earlier testimony was very similar to that which you have expressed here; namely, that we could have whole fleets of aircraft and a lot of machinery but without the necessary manpower to implement the use of that machinery and flight equipment, the additional burden which would be brought by an M-day proceeding would mean that it could not be implemented. You may have all of the airplanes in the world but without the pilots to fly them as many hours as they are required to fly, that means that the airplane can't fly any more than they are able with the available personnel today.

One of the things that has been concerning me today as a member of this committee, and I know it is of concern to others, is how we may be able to provide not only this additional manpower but its employment in the meantime in the industry, or to expand some portion of the industry which might not be of full importance in the event of mobilization and from which the manpower might then be drawn. I assume from the course of your studies, in the committee of which you were chairman, that consideration was given to those facts.

Mr. RENTZEL. That is true, Mr. Hinshaw.

Mr. HINSHAW. Could you elucidate for our reference?

Mr. RENTZEL. The basis of a study to make available a strong civil air reserve to the military was, of course, founded on the idea that it would be immediately available. It would be of little use if this took 9 months or a year to make itself available. The purpose of the study was to find a way in which all available civil aircraft were to be available, with personnel to fly them and maintain them, within 2 days. So, basically, the plan presupposes a supply of essential personnel to fly them. As you very well pointed out, we could build hundreds of aircraft in a reserve fleet and put them away in a hangar and theoretically suppose that they would be available to us on M-day. It is pretty obvious that not only does it take people to fly them but it takes people to maintain them. It is pretty obvious that such a fleet would tend to be not only obsolete but unready. It would not be in a position to be put into operation without the necessary manpower. And it would also be a very expensive way to do it.

The basis upon which the Departments of Defense and Commerce went at this plan was that we would try to find a way to make every aircraft that we could economically available to the civil air fleets and, by the civil bearing most of the burden in nonwar years, create a large fleet of aircraft which could be made available and with trained personnel on M-day plus 48 hours. That is the essence of the whole plan.

The weakness of the plan, of course, is that even with scope of effort we are still going to fall short of military requirements on M-day, which we know.

Also and more important, perhaps, is the fact that we will not have necessary personnel—at least we do not have them at the present time—to make available that amount of aircraft to the military and still continue essential nonmilitary services by using the aircraft for a greater number of hours. At the present time, neither the military or civil are using the aircraft of this type, transport or light aircraft, to their maximum utilization. During the war it would be as it was during the last war, essential to get every hour out of every airplane we could, to get as much transportation as we could. To do that, it means more people to fly the airplane more hours. Therefore, the critical factor seems to me to be a shortage of manpower.

I would like to make it clear that this does not in any way, in my opinion, interfere with the military training program for its own operations of other aircraft. It seems to me that the whole effort here is supplementary. As we found in the last war, when we went into rapid expansion of both combat and transport aircraft, one of our critical problems was the manpower question. I might emphasize that it was more a shortage of mechanics than it was pilots. That is exactly the situation that we have today. It is more mechanics today than it is pilots, even though it is both. So the military training program alone is not going to solve the whole problem, and I think they realize that.

I think this problem is one of providing an expanded operation on very short notice with additional personnel. I believe that the bill would help to do that.

Mr. HINSHAW. Thank you very much, sir.

Mr. MACK. Mr. Rentzel, there is a certain shortage today among the civil airlines for skilled mechanics in A. and E.; is that true?

Mr. RENTZEL. Yes, sir.

Mr. MACK. It appears to me that it would be contributing to the safety of the passengers of the air carriers if we gave some encouragement to train additional personnel to provide skilled personnel for this industry today, as well as for the mobilization day.

Mr. RENTZEL. Yes, I think that is right, sir. Of course, you normally would expect that airlines would be able to take care of their own problem. They usually have between wars a relatively good pool to draw from. But in this situation they don't. They are going into rather large-scale expansion, which we encourage, or I should say when I was in the Government at least we encouraged, because that seemed to be the most economical way to meet the auxiliary military problem. Needed aircraft would be absorbed into commerce and would cost the taxpayer less money. But the difficulty that I think we are faced with now is that our training facilities as such are drying up because of a lack of over-all requirements or in such a way, at least, to stop creating any new training facilities. Some of the facilities are going by the wayside because we have no definite plan to keep a minimum training program in effect. I think your point is well taken. It would not only contribute to today's safety of the commerce, but to the reserve fleet plan as well.

Of course, I am sure the airlines are doing everything within their power to get the necessary personnel, both pilots and mechanics, and I think their problem is less critical than that of the general aviation field. But nevertheless the general over-all shortage is here. I think we have to take some steps to meet that emergency need as well as the immediate need.

Mr. HINSHAW. Mr. Rentzel has mentioned the fact that the airlines as such can very largely meet their own needs through local training programs of their own. That, I assume, is true of the larger air carriers, particularly in the establishment of an apprentice training program and things of that sort. However, if you take all of the aircraft that are maintained in small installations such as fixed base operators, corporations, and so forth, which really forms the bulk of the total in aviation, those people are not in a position to operate these apprentice training programs, or are they?

Mr. RENTZEL. No sir; they are not. And that is a very good point on another score. A great many of the trainees, particularly the mechanical trainees of those training programs, have been attracted by higher wages into the aircraft manufacturing field, for example, which, of course, we need too. But it denies that pool also to these smaller carriers.

I think your point is very well taken. The larger carriers are usually able to take care of themselves because they have the volume. It is the smaller carriers who are hurt by not having any source of supply, and it makes them scrounge a lot harder to get the personnel.

Mr. HINSHAW. Neither do they have the provisions for the training programs.

Mr. RENTZEL. That is right. There is not enough volume there for the apprentice training.

Mr. DENNY. On that point, do you think it would be better to use existing schools and existing methods of training, or do you think it

would be possible to have a pool of airline manufacturers who would start schools or encourage schools with Federal help in various parts of the country so there would be a standardization of training? It seems to me there will be a very great difference in the type of training these men will get.

Mr. RENTZEL. Mr. Denny, I can refer back to World War II experience. With the centralization of the training control, you might say, under this war training service, originally in the civil pilot program, and then in the war training service, I think there was a good measure in the standardization of the training method because you had one training agency supervising the actual operations. I would think something like that would be desirable again; that is, some agency being given the responsibility for standardization of training. I believe it would be a fairly large-scale venture. I am certain that the way to do it would be to form an advisory group of the carriers and the other units and develop a training program. I believe that is what was done last time.

Mr. DENNY. If you remember, there were great inducements offered in the fall of 1942 to get radio operators and airplane mechanics. I was one of the officers sent out to make speeches on the courthouse steps. I was accompanied by a band and a beautiful singer. They promised many things—that they could take their families with them and they would not be very far from home. We got quite a few of them.

Mr. RENTZEL. It sounds like an interesting way to get them, but I would think, too, that it might be a little, we will say, a little expensive. I know you had to do it because there was no other alternative. But I would hope that we might require something less than nice houses and other attractions to accomplish the purpose, if we plan in advance. Are there any other questions, Mr. Chairman?

Mr. HINSHAW. Mr. Chairman, I am sure that we appreciate Mr. Rentzel taking time out from his business to come here and present his views to us. I think that they have been of material benefit to the committee, particularly in view of the fact that he instigated this program for making available to the armed services a part of the civil air fleet. As the instigator, prime mover, and so forth in that field, his knowledge of the conditions is really basic.

Mr. MACK. On behalf of the committee I want to thank you for coming up here and spending the time this afternoon. We do certainly appreciate the statement you have made, and we appreciate the statement because of your background in aviation. We feel that you are thoroughly familiar with this situation. Thank you very much.

Mr. RENTZEL. Thank you, Mr. Chairman. It is always a pleasure to come before this committee. I have a lot of friends on it.

STATEMENT OF CHARLES HORNE, ADMINISTRATOR, CIVIL AERONAUTICS ADMINISTRATION—Resumed

Mr. MACK. We will now hear from Mr. Horne again. Will you continue your statement?

Mr. HINSHAW. Mr. Chairman, I would like to ask Mr. Horne a few questions that are related to this bill, and yet perhaps not directly. It is my understanding that the Administrator of Civil Aeronautics, being yourself, has experienced considerable difficulty in staffing the Federal airway service since the Korean incident; is that correct?

Mr. HORNE. Yes, sir; that is correct.

Mr. HINSHAW. Was it not the case that a number of your civil airways personnel were in reserve status and were taken into the military?

Mr. HORNE. That is correct, sir.

Mr. HINSHAW. And thus leaving very wide gaps in certain places which had to be filled rather quickly in order that civil aviation traffic as well as military might move, is that correct?

Mr. HORNE. That is correct, sir.

Mr. HINSHAW. What was the incident—was it at Dallas—where you ran completely out of controllers for a while?

Mr. HORNE. There was an incident, sir, at Dallas, where people were recalled to military service and then during instrument weather, subsequently, we had to restrict traffic, both military and civil, to the number which the controllers that we had left could safely handle. We did so.

Mr. HINSHAW. Have you had to ask the military to release to you certain personnel for staffing some of these positions?

Mr. HORNE. We have, sir, because it requires from 1 to 4 years to train a traffic controller so that he can be placed in charge, alone, of a traffic control situation. It is not possible for us to replace our losses out of hand or from any source available to us. We must take the men and train them on the job over a long period. Consequently, these losses were suffered where we had tried, by promotion, and getting in additional trainees, to do the best we could for ourselves. We had to request and did request the Air Force to return to us a definite number of controllers. They did, and we still have those people on temporary duty in order that there will be enough people to safely control traffic.

Mr. HINSHAW. You have been called upon to install a number of electronic devices provided for in appropriations by the Congress, electronic devices that were a part of the so-called SC31–3 plan, for establishing the common system of aid-to-air navigation and landing. Where have you been able to find the electronic technicians to maintain those pieces of equipment?

Mr. HORNE. We have had great difficulty, sir. We have tried to recruit and train people for the jobs. We have had retraining of our less skilled people for it. However, a significant fact is that due to a shortage of personnel we have not been able to commission and place in operation some of the equipment and facilities which were installed.

Mr. HINSHAW. What types of equipment are those that are lying idle today for lack of personnel?

Mr. HORNE. They are instrument landing systems. A radar and some of the omni ranges have not yet been placed in actual operation.

Mr. HINSHAW. If you are enabled, through appropriations, to complete the system of aid-to-air navigation, will you require additional technical personnel, either in mechanics or electronics?

Mr. HORNE. We certainly will, sir.

Mr. HINSHAW. Have you any estimate as to the potential shortage of technological personnel?

Mr. HORNE. Solely for airways operations, sir, the figures are relatively small. But they become extremely large when viewed in the shortage of electronics people as a whole in this country. Specific figures would be very difficult to give you, depending on the number

of appropriations that we might get for future years. However, at the present time I am short about 100 people. This is in the technical, electronics, and allied fields.

Mr. HINSHAW. I take it that you hope to have, in the Federal airway service, a number of radars as well as omni ranges and other equipment?

Mr. HORNE. I think, sir, as the importance of air power to this country increases and as the need in this country for air transport in its national economy, and so forth, increases, it is a matter of safety of our airways which must be increased, as it does increase. We must have additional aids to traffic control and these are the things that are contained in our annual establishment program. These things will require additional people to maintain and operate.

Mr. HINSHAW. You have a very large establishment of radio as well as radar and other electronic equipment, I understand.

Mr. HORNE. That is correct. Our communication system is a large one, connecting all the towers, centers, communications stations, and facilities.

Mr. HINSHAW. Who maintains the teletype system which is employed in civil aviation?

Mr. HORNE. The Civil Aeronautics Administration maintains it.

Mr. HINSHAW. Well, that in itself is how many miles of teletype?

Mr. HORNE. I would like to give you the figures as they appear on our records presently.

Miles of teletype	110,587
Miles of interphone communication	63,058
Total miles of teletype and interphone communication	173,645

Mr. HINSHAW. That is available, I believe, to the Weather Bureau?

Mr. HORNE. Yes, sir.

Mr. HINSHAW. And the teletypes from the Weather Bureau go into every military air installation, is that correct?

Mr. HORNE. That is correct.

Mr. HINSHAW. Hence the entire circuit would have to be operated by the military if the civil went completely out of business.

Mr. HORNE. I would go further. The entire airways aids to navigation and control system, I would say, is of almost equal importance and almost equal use by military aviation as it is by civil aviation.

Mr. HINSHAW. That system is widespread not only through the United States and Territories and possessions but elsewhere, I understand.

Mr. HORNE. That is correct, sir. And other countries are now adopting the techniques, equipment, and procedures incident to our safety methods of air traffic control in aids to navigation. It is becoming world wide, the standardized common system.

Mr. HINSHAW. Are you having difficulty in recruiting personnel into the Federal airways service for various positions?

Mr. HORNE. My greatest difficulty now, sir, is to get the money to pay them.

Mr. HINSHAW. No comment.

Mr. MACK. I might say in that line that while the other countries are designing their traffic-control systems after ours, it is like everything else that we have here in comparison with other countries. They are quite a way behind us.

Mr. HORNE. Many of them are still quite a way behind us, sir.

Mr. HINSHAW. Mr. Mack is well qualified to speak on that subject, having utilized those facilities all around the world on a recent trip.

Mr. MACK. Any other questions?

Mr. HALE. You used an expression here at the end of your statement which is quite frequent and which always troubles me.

> The enactment of these bills would not be in accordance with the program of the President at this time.

Just what do you understand to be meant by that expression?

Mr. HORNE. Sir, my understanding is that the Bureau of the Budget, representing the administration, did not include this type of program in its fiscal program as submitted to the Congress for this fiscal year, and therefore, at this time the administration does not support this as a part of the program which it has already recommended to Congress.

Mr. HALE. That expression simply means that the legislation was not envisaged when they made up the budget, is that right?

Mr. HORNE. That certainly is one of the meanings; yes, sir.

Mr. HINSHAW. I might point out that this is one bill that was not sent here from down the street. This bill was drawn by members of the committee, and presented not as an administration measure but as something original with this committee.

Mr. SCOTT. Using their inherent powers?

Mr. HINSHAW. Using their inherent powers.

Mr. HALE. Does this mean, Mr. Horne, that it is actively opposed by the Bureau of the Budget as something that was not comprehended in its program?

Mr. HORNE. I would say, sir, that it means that it is not endorsed by the Bureau of the Budget.

Mr. HALE. The statement here in this form puzzles me.

Mr. MACK. Mr. Horne, I notice that you have placed emphasis on the general mechanics and the technicians. I am wondering if you shared the concern that apparently some of the military leaders have, and I know that we are very much concerned with, and that is the shortage of pilots or potential pilots, the shortage of cadets for the military programs today, the cadets program for the Air Force and the Navy.

Mr. HORNE. Yes, sir; I am very much concerned about it. We have talked here today a great deal about A. and E. mechanic shortages because the largest number of shortages and the greatest number of personnel are involved in our A. and E. mechanic shortages. It does take time to train them. However, there is also a definite shortage of pilots, and I think we should be much concerned, not only about the immediate shortage of pilots, but even more so about the potential shortages of pilots unless we do something definite to encourage the young men and make it possible for those who want training to seek it and get it.

Mr. MACK. Is it your opinion that the original civilian pilot training program developed considerable interest in aviation at the time that it was in operation here in our country, prior to World War II, and that many of the students in this program enlisted in the military services around 1940, 1941, and 1942?

Mr. HORNE. There is no question about that, sir. As a matter of fact, I have figures right before me to show exactly what happened to 434,990 CPT trainees.

Mr. MACK. I would be very much interested in that, and I am sure that the committee would like to have a report on that number.

Mr. HORNE. I can read them right here, if you wish.

Mr. MACK. If you will.

Mr. HORNE. Out of 434,000 CPT trainees, of which I have the figures here before me, 327,000 of them went to active duty and Army Reserve in the Air Force. That figure is an official figure obtained from the Air Force. Additionally, 25,000 became Army cadets; 17,000 became Navy cadets; 9,000 became Army instructors; 2,000 became Navy instructors; 3,000 became additional civilian instructors or contract instructors; 1,000 went to the airlines; 250 became test pilots; 2,000 were women pilots. That made a total of 59,000. There were only 17,000 wash-outs, and only 31,000 of which we have no record. We don't know what happened to them. That makes the total, then, of 434,000.

So I should say from those figures it was pretty evident that regardless of what various people may or may not think of the old CPT, the results were there, they trained the people, and the people went into the Armed Forces and into commercial aviation, but largely to the Armed Forces, as these figures show.

Mr. MACK. Of that 17,000 referred to as wash-outs, is that washed out of the military program?

Mr. HORNE. That was my understanding, sir.

Mr. MACK. We had talked yesterday and we obtained some very interesting figures concerning the number of cadets that washed out of the military program without any type of previous aviation training, and it is amazing. We also discussed the cost of training this group in the lighter types of aircraft. It was quite interesting to me, and I feel the committee shares this view, to have those figures yesterday. Do you have any further questions?

Mr. HINSHAW. Are there any other facts and figures, Mr. Chairman, which Mr. Horne can give us? Obviously he has some before him that we don't know just how to ask for. I would like to know what he has to offer there so that I might ask him to offer them.

Mr. HORNE. It occurred to me to think, Mr. Chairman, that since there was some discussion of the CPT program, it might be interesting to note what the relative appropriations were for CPT both direct from Congress and contributed by the Army and the Navy. In order to demonstrate the point which I think is a very important one, we recognized prior to World War II that we must do something to prepare for it. During World War II we did a tremendous amount of training. We had great difficulty in keeping pace with the aircraft production, with the production of pilots and mechanics. I think the big thing that faces us today, as we have heard from the Defense Air transport Administration and other witnesses here, if we do not do something to insure people to man the airplanes on the increased hours of flying and the increased number of airplanes, and I am speaking of civil airplanes, if we don't do something to make it possible to utilize these airplanes for our national defense and increased national production which will be necessary in mobilization, we will not be able, because we cannot train these men overnight. The actual figures here show that over the period of years, $167 million was appropriated by

the Congress for the CPT training program. An additional $7 million of special funds was placed in the program by the Congress. I am giving round figures, Mr. Chairman.

The Army contributed $31 million, the Navy $66 million. That makes a rough total of $273 million. That is what it cost us, and that is what we put into pilot training. Now we are facing the possibility of the future with increased aircraft, more complex aircraft. More training, longer training and better training is required and we have no program for that training. We know that the shortage of mechanics and pilots is a very serious thing for the country as well as for the civil aviation industry.

Mr. HINSHAW. I think, Mr. Chairman, that the record should be held open for Mr. Horne to include such results as his survey may bring forth, if possible, before these matters may be considered by the committee in executive session.

Mr. MACK. Without objection that may be supplied.

Mr. HINSHAW. Now, Mr. Chairman, several witnesses, including Mr. Horne, have mentioned the fact that there is an NSRB report which would have to be considered by the committee in executive session because of its classified nature. I believe also there is a potential discussion of programs of this nature being conducted in other countries than this, which is likewise a matter of classification, which the committee would have to consider in executive session. I suggest that those two matters be kept in mind by the committee for its opportunity to give consideration to them.

Mr. MACK. That will be done.

Thank you, Mr. Horne. We do appreciate the time that you have spent with us this afternoon, and your testimony.

Mr. HORNE. Thank you, sir. It is a pleasure to have the opportunity.

(The following statements were submitted for the record:)

STATEMENT OF AMERICAN ASSOCIATION OF AIRPORT EXECUTIVES

We wish to present to you a brief in support of H. R. 7073 and H. R. 7074, which provide for the training of civilian aviation personnel. The American Association of Airport Executives is an organization composed of the managers, superintendents, and other officials directly charged with the responsibility of operating the Nation's system of civil airports. By far the greater percentage of our membership are managers of municipal airports and so we represent the local subdivisions of government throughout the United States. We are happy indeed to have the opportunity to appear before this distinguished committee on which it is our privilege to have many close personal friends.

Just as a matter of keeping the records straight, Mr. Melvin Nuss, Mr. Francis Bolton, and I (Walter E. Betsworth) are the managers of the municipal airports of Reading, Pa., Columbus, Ohio, and Waterloo, Iowa, respectively. We are here with the consent and at the request of our local city authorities, and as officers and members of the executive committee of the board of directors of the American Association of Airport Executives.

We wish to go on record before this committee as strongly supporting H. R 7073 and H. R. 7074 and sincerely hope that this committee will see fit after due deliberation to report it to the full House and recommend passage thereof.

For me to endeavor to point out to you gentlemen who have been so very close to the aviation development of this Nation, the limitless value of the air industry to our commercial, industrial, economic, and military security, would indeed by presumptuous.

We who operate the Nation's civil airports have within the last year, for the purpose of classification, divided aviation into four categories—military aviation, aircraft manufacturing, air commerce, and general aviation. General aviation includes all phases of aviation not embraced by the other three categories and

includes industrial flying, executive flying, instructional flying. The continued healthy growth of air commerce and military aviation and aircraft manufacturing are very dependent upon general aviation.

In appearing before your committee today, we who operate the Nation's airports are supporting this proposed legislation not because we will in any way benefit financially, but because we believe that the civil aviation industry and general aviation particularly, is very ill.

The basic segment of our air power potential, both civil and military, is the airport. This national asset is being dissipated because many airports are being abandoned. The rate of abandonment of these airports in the last 3 years has indeed been alarming. The extent of abandonment of airports from January 1, 1948, to June 30, 1950, as compiled from CAA documents, showed a total of 889 airports abandoned—101 were municipal airports, 474 were commercial airports, 195 private airports, and 119 others. The airports are being abandoned because of the lack of skilled personnel with which to operate them, and because their instructional facilities to train pilots, mechanics, and technicians are not being utilized.

The alarming shortage of skilled aviation manpower for the present and future requirements needs our immediate attention. When we are confronted with statistics that tell us that by 1954 scheduled airlines alone will be short 1,800 pilots and 10,500 aircraft and engine mechanics, and that 35 out of the present 46 certificated mechanic schools will be closed during this year, we can see where direct action must be taken to correct this appalling condition.

In September 1950, the Civil Aeronautics Administration compiled the fixed-base operator survey, whose services included hangar space, gasoline and oil sales, repairs, and aircraft sales, to find that there are 8,707 A. and E. mechanics to the 12,589 hangars in the United States.

The demand for aviation facilities and manpower has superseded the number interested and trained in this field. At the present time one of the greatest factors tending to discourage many a young aviation enthusiast from embarking on an aviation career is the prohibitive cost of instruction.

It is also a costly undertaking for the airlines and the aircraft industry to invest in basic training. If the airlines do it, we as taxpayers still pay the bill, but our local community airports do not benefit. The Air Force and Navy are doing an excellent job with their limited facilities, but we need a backlog of civilian pilots and technicians as well. High schools and colleges have proved of just limited value. What must be developed is a reservoir of young men trained in fundamental technical knowledge and training.

In the interest of safety in aviation we must have thoroughly instructed personnel in the cockpits of our airplanes, and skilled mechanics in the hangars.

General aviation, gentlemen, is sick, and general aviation has been the backbone and support of many of the Nation's airports.

It is recognized that instructional flying has, in the past, been a dominant part of general aviation, but today it is the one part that is relatively dormant. In the past, the fixed-base operator has relied upon instructional flying for a large part of his income, since the activity in the remaining parts of general aviation was relatively small.

The aviation industry of this country cannot grow and develop in a piecemeal manner. Each segment thereof depends to some extent upon the others. Not unlike the development and growth of a tree, aviation also has its systems of roots, trunk, branches, leaves, fruit, etc., each of which must discharge its functional responsibilities or in its failure it will retard the normal over-all development and growth. There is no disagreement regarding the present unhealthy condition of the flight operator's and airport operators segment of civil aviation, which if not remedied will all too soon spread like a disease and affect the remaining healthy segments of our aviation structure. It is, therefore, necessary that we restore this segment to a position where it will be self-sustaining and able to discharge its responsibilities to the industry as a whole.

As of January 1, 1952, there were 5,054 airports in the United States, potential bases for the training of vast reservoir of young men for the aviation industry both military and civil. Yet, as of January 31, 1952, we had on these 5,000 airports a total of only 1,539 approved flight schools.

We, of the American Association of Airport Executives, believe that the passage of H. R. 7073 and H. R. 7074 will provide training of flight and ground personnel needed for:

1. The efficient and safe operation of the Nation's civil airports.
2. Immediate civil and depot needs.

3. Will provide skilled people to fill M-day requirements.
4. It will help to curtail the abandonment of airports, and preserve the basic segment of any and all air power (the airport) as a national asset.
5. The airports must be preserved for once abandoned they are soon lost forever reducing our potential training capacity in time of national peril.

STATEMENT OF L. L. SCHROEDER, COMMISSIONER OF AERONAUTICS, STATE OF MINNESOTA, ON

(A bill to aid in the meeting of the defense mobilization requirements of the United States by providing for the training or retraining of civilian aviation personnel)

INTRODUCTORY

In the past 18 months or more it has been apparent to close observers that the sources of persons with aeronautical skills were not adequate to meet industry demands as well as military demands. For reasons which we will recite,the normal flow of young men and women receded at the very time when the demand was steadily increasing for more skilled persons in all phases of the industry. The shortage has been particularly evident in the areas of pilot skills, mechanical skills, and electronic skills.

ATTITUDE OF THE INDUSTRY

While the National Aviation Trades Association has been strongly urging that the Congress provide a new training program in the field of aeronautical skills, it is believed that the majority of the existing airport service operators view the potential return of a flight training program with both misgivings and regret. Most of these men have sincerely hoped for the coming of the day when the air segment of the aviation industry might become economically self-sufficient, and no longer dependent upon Federal programs or Federal subsidy. They have recognized that the price of such aids and programs is a mass of regulation and a distorted or maladjusted economic situation in their industry. With the ultimate termination of such aids or programs, the regulations tend to remain to stifle normal business, and the economic readjustment is slow, painful, and costly.

The 1948 President's Air Policy Commission Report gave partial recognition to this kind of maladjustment when it stated:

"In the past 10 years the Government has paid for the training of hundreds of thousands of military and civilian pilots who compose the largest ready-made market for personal planes and for airport facilities that has ever existed. This great mass of pilots will decide the near future of personal aviation. If enough of them do not continue flying to support the personal plane industry, their neglect should be an unmistakable sign to airplane designers that a new airplane is needed which will provide more utility at a lower operating cost. If, in fact, private aircraft do possess a significant economic potential, the Commission is confident that private enterprise will seize the opportunity as it already appears to be doing in the development of light planes for executive transportation."

INDUSTRY STATUS 1948

On January 1, 1948, the light aircraft industry had indeed hundreds of thousands of men with pilot skills as a potential market for its product—but that was about all that it had. Suitable airports with adequate facilities and suitable aircraft were lacking. The development of a Nation-wide system of civil airports, large and small, under the Federal Airports Act (enacted in May of 1946) and under the several State airport programs, was just getting started. Nearly a full year was to pass before the CAA established its regulatory procedure for administering the Airport Act. Some construction was started in 1947, but as of January 1, 1948, there were very few new civil airports to accommodate the civil aircraft and give it some measure of utility. The service facilities on these airports could not be created until the airport was ready. New postwar types of light aircraft were just beginning to reach the market. For the most part, the potential purchaser found available only vast numbers of "converted" military type aircraft, and two-place tandem trainers of prewar design. While the GI flight training program provided a stop-gap source of revenue for the airport service operators, it also stimulated the airframe manufacturers to produce thousands of prewar type trainers.

The demand for aircraft from the "ready made" market of hundreds of thousands of men with pilot skills had all but vanished by the time new and improved airport completions, and modern improved light aircraft were available in sufficient numbers to provide anything approaching utility for the purchaser and user. Many thousands of these buyers, not understanding the extensive time lag which would be required to accomplish these improvements during a peacetime economy, were to be disappointed and disillusioned. Even the scheduled airlines suffered great financial losses during this conversion period, and were saved from wholesale bankruptcy only through the medium of massive doses of mail-pay adjustments. Many of the airport service operators were unable to survive this period of waiting and we saw the beginnings of the uninhabited airports—the first break in the chain of supply of aeronautical skills.

IMPACT OF THE WAR EMERGENCY

Then came Korea, and the immediate skyrocketing of the prices of all aircraft, parts, and accessories. Some of the better aircraft more than doubled in price in a matter of a few weeks. Others went out of production as the manufacturers turned to exclusive military contracts. The remaining airport service operators found themselves either without a product to sell, or in the position of attempting to sell to a limited civilian market a product priced to meet Government procurement standards. Few civilians could compete in the open market with Uncle Sam's tax dollar. In an economy in which somewhat over 30 percent of the Nation's total dollar volume of business was represented by defense contracts with the Federal Government, the surviving airport service operator found himself with nothing which he could sell to Uncle Sam, except his services, and little or nothing which he could obtain to sell to a slowly growing civilian market. The businessman, the professional man, and industry had begun to discover the value of the improved small aircraft as a vehicle of transportation. With that discovery came the realization that it had been virtually priced out of the market, regulated out, or was just unobtainable. The decimation of the small airport service operator was now nearly completed. Those who remained had attained a hard-won but precarious financial stability no longer dependent upon GI training. They were doing business with industry. But they had lost contact with the youth of our country who at one time gained their initial skills at the small airport and with the airport service operator.

THE SHORTAGE OF AERONAUTICAL SKILLS

Meanwhile the well of pilot skills and aviation mechanical skills has suddenly and unexplainably "gone dry". Whereas the veteran airman of World War II and the thousands of early trainees from the GI training program could find no employment in aviation, for the last year or more most of the GI trainees, not otherwise employed, have found immediate employment in aviation. Good flight instructors have become difficult to find. There is an acute shortage of pilots with the required skill and experience for agricultural aerial spraying and dusting. The airlines are bidding against each other with lower and lower previous experience requirements for the services of young men with any reasonable amount of flight experience. Experienced aircraft and engine mechanics are almost impossible to find. With the slow but steady increase in the business and industrial use of the light aircraft, a number of uninhabited airports could now sustain a commercial operation, but qualified men cannot be found.

The 1948 President's Air Policy Commission Report said:

"But most important is the fact that according to the evidence submitted to the Commission civilian instructors are unlikely to be required for any emergency within the next 15 years because of the availability of World War II pilots. This 15-year availability of World War II pilots for instructor, patrol, and transport duties ensures personnel for these three important emergency functions which were largely performed by private pilots in the early years of World War II."

The above-mentioned 15-year availability of pilots has suffered the same fate as the "ready made market." We have found that aeronautical skills are not something that one can put in a bank against future need. Attrition and age have taken their toll. When the cover is removed from the supposed reservoir of aeronautical skills, it is found to be virtually empty. We have tried to feed this reservoir with backwaters rather than springs. Our total national policy in its drive for superlative air power neglected two most essential factors, namely, the grass roots of aeronautical interest which springs from our small towns and

small aviation operations, and, most vital of all, our youth. We have trained thousands of veterans of World War II at great public expense. In doing so, we made it almost impossible for the younger men to acquire aeronautical skills.

Since the war, the young man who might have wished to seek a future in aviation found that to acquire such training, (unless he was a World War II veteran) he must pay the same price with his earned dollar, after taxes, that Uncle Sam was paying with the tax dollar for the instruction of the GI. In most instances these young men could not compete with Uncle Sam, matching their earned dollar against the subsidy dollar. Moreover, he was confronted with a mass of regulations which were the aftermath of such programs as the civilian pilot training program, the war training service training program, and the GI flight training program. These regulations helped to bog down the recovery and conversion of civil aviation to a peacetime economy, with the added result that job opportunities in aviation were limited for the young man.

Thus we find the river of supply of young men and women trained in aeronautical skills virtually shut off at its source. There are not enough of them to supply the normal increased demands of business, industry and agriculture. The shortage becomes acute in view of Air Force procurement requirements, selective service, and defense production.

If there were enough time, the best and most economical solution for this predicament would be to assist civil aviation, and particularly the light airplane segment, toward economic self-sufficiency by every possible means short of direct Federal subsidy or a number of training programs. Most of our existing airport service operators will now survive, with very little assistance other than relief from the staggering load of regulation.

In view of the emergency and the defense requirements, we do not have the required time. It takes at least two years to develop a good commercial pilot and from four to five years to make a good air transport pilot. It takes from four to five years to develop a good aircraft and engine mechanic. If the flow of the river of supply of persons with aeronautical skills could be started today, it would be at least two years before appreciable results could be noticed. Under the circumstances, the brushing aside of the light aircraft segment of civil aviation, in the President's Air Policy Commission Report of 1948, stands today as a grievous error.

TRAINING REQUIREMENTS

Old timers in the flying business will testify that fundamentally, all aircraft fly approximately the same way. Having learned to fly one type of aircraft, it does not take long to convert a pilot to another type, or to teach him the use of new gadgets. The first great hurdle in flight training is that of letting the individual become accustomed to being in the air space. It is a process of developing the confidence of the individual in himself and in the vehicle, together with certain basic reflex actions or instinctive reactions which come only from hours of experience in the air. This initial training, fortunately can be accomplished anywhere, be it Podunk Center or Metropolis, Texas or Montana, Maine or California, winter, or summer. If the initial training is accomplished at the community level, unnecessary costs are avoided for housing, feeding, and clothing the trainee.

Thousands of improved large and small airports are available in most areas of the United States close to the community. Many of these have improved facilities in the nature of hangars, office buildings, and shops, which were nonexistent during World War II. The tendency to consolidate the small flight school into large training bases which was the history of World War II, can be avoided, with its greater costs and greater hazards, and its social and economic disruptions. Flight training provides the opportunity to train service personnel and aircraft and engine mechanics at the same time, in the over-all essential requirements that ultimately get the airplane into the air.

The flight equipment used for such an initial training program should not be aircraft cluttered with the implements of war. The training aircraft of World War II were for the most part useless for any other purpose and became a major industry problem after the war.

Since the essential requirements of initial flight training can be accomplished in civil-type aircraft, the opportunity is offered to stimulate airframe manufacturers to build such types rather than special trainers which must be "converted" or junked when the emergency is over. The end result will be to leave the light-aircraft industry segment with a standard and tested product which can be produced and sold for a peacetime market, rather than an assorted collection of orphaned military-type trainers. The manufacturer will be left with the tools

and jigs, this time, to supply a new "ready-made market" with a usable vehicle at a reasonable price—and without years of delay.

The States should have some voice in the handling of such a training program for civil airmen, since all of them have a vital interest in the residual value of such a program. Most of them have long-range plans for the sound development of their aeronautical resources. Most of them have a close and intimate understanding of the industry problems in their geographic area, together with the economic and social implications of all phases of aviation development as it relates to their cities and towns. The problems of the northern Snow Belt States will be different than those of the South, and the Great Plains States different from those of the industrial east, or the agricultural areas.

SUMMARY

It is of the utmost importance in contemplating still another flight-training program to recapture the vigor and capacity of youth in our total air-power requirements, that there be the least possible dislocation of the peacetime conversion of this segment of the industry which has already been accomplished. If the progress which has been made is destroyed, it may well be that the Nation will be forever confronted with the necessity of subsidizing the flight training of our youth. On the other hand, with the progress which has been made, it is only a relatively short step from where we are to the sound and economically self-sustaining utilization of our total aviation facilities including the light-aircraft segment, and including the little airports in the small towns as well as the major air terminal, the little airport service operator or the large aircraft maintenance station.

If these roots of our total air power can this time be firmly established, they can again feed to the major industry and to the air forces the constant and unending stream of young men and women possessed of basic aeronautical skills so vital to our national security and national economy. It is most fortunate that we still have a large number of competent and well-equipped airport service operators located on our airports Nation-wide, ready and able to take on again the task of training civil airmen—pilots, mechanics, and other technicians. The shortage of these skills will be most acute before any relief can be provided. In another training program, the objective should not be the single purpose of filling the now empty reservoir, but rather, the opening of the springs of supply at the grass-root sources, that the river may continue to flow.

THE SECRETARY OF COMMERCE,
Washington 25, May 15, 1952.

Hon. ROBERT CROSSER,
Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives, Washington, D. C.

DEAR MR. CHAIRMAN: On April 30 of this year Mr. Charles F. Horne testified before your committee in regard to the bills H. R. 7073 and H. R. 7074, to establish a Federal aviation training program. At the conclusion of his direct testimony he was questioned by members of the committee. In the course of this questioning Congressman Hale asked for an explanation of the last paragraph of his prepared testimony, which incorporated the recommendation of the Bureau of the Budget that enactment of such legislation would not be in accord with the program of the President.

In attempting to explain the exact meaning of this clearance, Mr. Horne felt that he did not fully indicate the intention of the Bureau of the Budget. The Department of Commerce therefore requests permission to include in the record the following explanation which it has received from the Bureau of the Budget:

"Procedurally, 'not in accord' advice means that three steps have been taken:

"1. That the bill has been reviewed within the executive branch by the agencies felt by the Bureau of the Budget to be most concerned,

"2. That agency views have been evaluated by the Bureau of the Budget on behalf of the President, and

"3. That in the light of such evaluation and after such further Presidential review as appears to be indicated in any specific case, the formal position of the administration is one of recommending against enactment of the bill.

"Generally speaking, agencies may be advised that enactment of a bill would not be in accord with the program of the President on one or more of the following

grounds: (*a*) That its purpose would be contrary to an announced position of the President;

"(*b*) That the bill is felt to be unnecessary to accomplish the ends sought, or (*c*) that the bill is undesirable from the point of view of policy, program, fiscal impact, or timing. While 'not in accord' advice is a recommendation that a bill not be enacted, it does not necessarily commit the President to veto the measure if passed. If the Congress proceeds to enact a bill in spite of an adverse recommendation, the matter is again reviewed when the President discharges his constitutional responsibility for approving or disapproving acts of Congress."

If we can be of further assistance to you in this matter, please call upon us.

Sincerely yours,

THOS. W. S. DAVIS,
Acting Secretary of Commerce.

Mr. MACK. Are there any other witnesses here that would like to be heard on this matter.

The committee stands adjourned.

(Whereupon, at 3:37 p. m., Wednesday, April 30, 1952, the hearing was adjourned.)

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